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EDITED BY

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New York Teachers Monographs
PLANS AND DETAILS OF GRADE WORK
JUNE 1908

Groups in the First Year

By Mrs. Harrie Davis.

The 1A grade may be divided into unlimited groups, but it is best to have about three groups. The "left-backs" usually form the first group. Added to these "left-backs" are the transfers from other schools and a few bright children who adapt themselves readily to school life and are able to progress gradually.

The second group is made up of the new arrivals who can absorb the grade work daily in a perfectly normal manner—neither too quickly nor too slowly. This is generally the largest group.

The third group includes late arrivals, those who are irregular in attendance and the mentally deficient children. There are teachers who keep these mentally deficient in a group by themselves, but this does not seem desirable. They will be less diffident and will expand more if placed with normal children and if as little notice as necessary is taken of their infirmities.

After the first month these groups will take care of themselves, but they should be changed around. The first and second groups should have frequent additions by promotion. Occasionally when the teacher finds she has mistaken for ability a child's bright look and eager manner she will have to reverse the process.

For the separation of the groups the ideal classroom is the one where the children may advance to a set of little chairs placed around the teacher in a semicircle, there to read or recite comfortably. The next best is where a section of desks and chairs may be reserved for such work and kept vacant when not in use. Unfortunately most of the city schoolrooms are too crowded for either plan. Some teachers do use a separate section of seats, making the children change places with each recitation. This, however, is feasible only in the higher grades. The smaller children would be kept in a state of mental confusion by such a proceeding, especially in classes where the foreign element predominates.

Under existing circumstances the most practicable way is to keep the different divisions sitting together and to call them to the teacher's desk a row at a time. In that way there will be eight or ten, at the most, receiving personal attention at the one time. As each child reads or recites let him go to his seat and perform some "busy work," which should be arranged so as to follow as closely as possible the subject matter in hand. If a child seems to be backward let him remain by the teacher's desk and listen to the others. If the busy work awaiting him be of the kind to attract and hold his attention, he is not likely to repeat his failure.

Busy work forms a very important part of the group method. Many teachers dread dividing their classes, because of the difficulty of keeping the

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children not reciting, busy and interested. Certainly the preparation and distribution of busy work requires a great deal of skill and ingenuity. Busy work when done should always be examined. That is the real secret of enthusiastic unsupervised work. We all like appreciation, and if a little industrious soul arranges his paper with neat little red or blue decorations in each corner or draws colored lines between the columns of figures he has been copying he will love to have it noticed, and a word of approval will spur him to even greater effort next day.

Give to each child a large manila envelope holding a pencil, colored crayons, a pair of scissors, a 2-inch and a 1-inch square tablet and a 2-inch and a 1-inch circular tablet. These form a very good foundation for busy work.

After the opening exercises, begin the day with card drills in phonics and words previously taught. As these drills lose most of their merit unless they are conducted rapidly, the entire class may recite. The children learn much from one another in those drills where the words are already familiar.

Lessons in the new words for the day should follow this drill. Suppose one of the words is "house" and they have been hearing about the house that Jack built. What more delightful occupation than to be allowed to cut out a large house and to color the chimney red and the blinds green, etc.? A lesson like this would require no preparation beyond the distribution of manila paper, and as the different divisions are called to the desk the teacher is rewarded for her ingenuity by the quiet needed for the recitations. Those red chimneys and those green blinds take time and absorb attention. Perhaps some youngster with more than the average individuality will embellish his window sills with flower pots. After all have learned to copy writing they can inscribe on the backs of their pictures, "This is the house that Jack built."

After a preliminary drill by the class with the number cards, have the children make a "picture" of the combination under consideration for the day. Let us say they are studying $1 + 5 = 6$. Distribute bogus paper. Let the children prove the statement with their 1-inch tablets and colored crayons. Thus:

They may reverse the picture on the other side of the paper or they may exercise their ingenuity in making groups of 6. Thus:

The youngsters never tire of making these combinations, and it helps wonderfully with the number work. They can also use their colors in their grouping, Thus:

red blue red 6 red blue red

A good deal of mental activity is needed in this work, simple as it seems.

When the children are at the board in the penmanship lesson their name cards may be used for copying. It is well, however, to have very little of the writing work unsupervised unless it be tracing over a letter or word. Even then the little hands are apt to cramp and the work is neither valuable nor interesting. Much better reserve some little treat for the penmanship time. Cut up pictures, for instance. A small outlay for the colored "Mother Goose" books with duplicates to each will more than pay for itself

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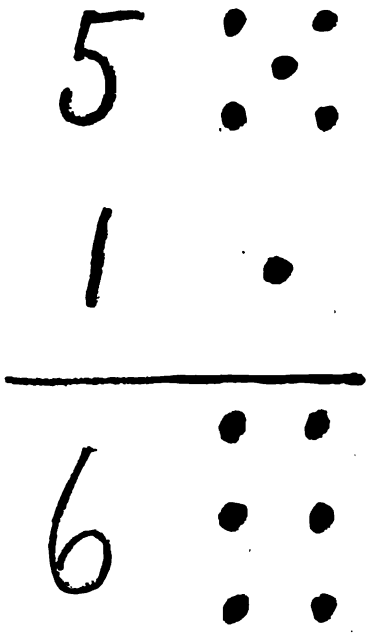

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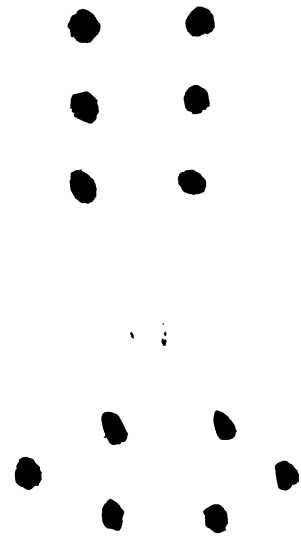

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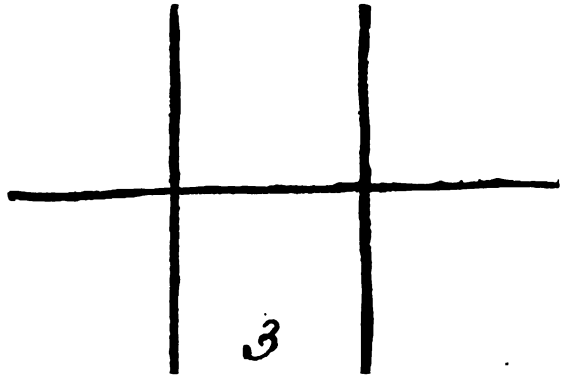

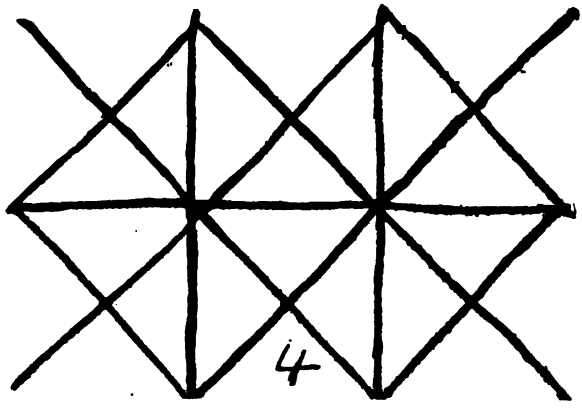

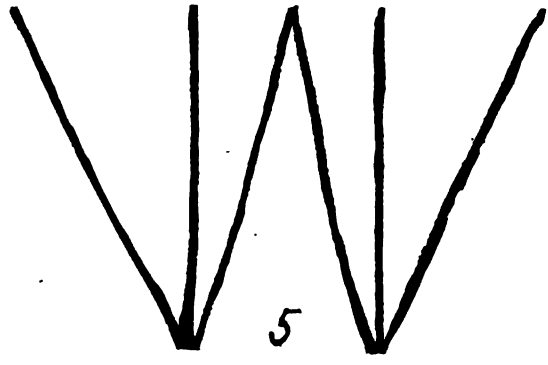

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in satisfaction and result. Each book will make eight or ten pictures. Cut out the duplicate leaf for a guide upon which to lay the cut-up sections. If the children are very young cut the picture simply.

If they are more advanced the picture may be cut in this intricate fashion:

or so:

It is well to have the preparatory reading in the morning and the lesson itself in the afternoon.

One of the most successful exercises for busy work during this period is a set of outline pictures with the name of each picture on a separate slip. These are arranged in packages in small envelopes. Each child has an envelope with a generous supply of cards for himself. The words selected should not be entirely the sight words but should be selected from the phonic list that the children may think them out: as mat, man, pan, can, ball, bat, etc. Slip in a few odd words which have not been taught but which they may recognize themselves. A few of the favorites in my set are umbrella, boat, ladder, fish. The children are very proud of their cleverness when they read or recognize a "hard" word.

When they are able to read fairly well, a set of supplementary readers may be distributed, but as a rule they will read aloud semi-unconsciously and it is apt to be disturbing. A set of readers containing outline pictures or stick-laying exercises would be better. Here is one method of finding out weak spots in a drill: Let those who fail in a rapid drill remain standing; give them another chance, and if they fail a second time give out the busy work to the rest of the class and proceed to strengthen up the weak spots.

Many teachers still object to the group method of separating the class into divisions. Their objections in almost every case are aimed at the time taken up in giving out the busy work. If the work is planned ahead and the children are provided early in the day with their materials, everything will work smoothly.

The gain to the child and the ultimate comfort to the teacher are very great. Each child will receive personal attention. His defects of speech and pronunciation are more readily perceived and corrected at close range. The timid ones are made to feel at ease, and if a few notes are jotted down occasionally about the progress of individual children no child need go over any of the same work unnecessarily. He is steadily advancing as an individual instead of being kept back by the halting of others.

The child is stimulated healthily to greater efforts. He will ask to be let read the "first division story." He will volunteer to recite or write something in advance of his division, and very often he will surprise the teacher by his increased ability.

There is so little time for wandering thoughts or mischievous fingers to go astray that the child is continually advancing naturally. There is no forcing necessary.

The teacher who applies this method to her class will be absolutely sure of the standing of each child. She can prepare the slower children for advancement without feeling that the quicker ones are at a standstill. She will have no discouraging halts—no days of depression, when, as one teacher said, "nobody knows anything." Every day will show progress in some direction.

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Report of a Lecture on the McCloskey System of Teaching Reading.

PREPARATION WORK.

First Lesson—Nature lesson on the kid. Have the live object if possible; if not, a picture.

Second Lesson—Nature lesson on the ox.

Third Lesson—Tell the content of the lesson in conversational prose. Repeat at intervals until pupils know incidents in order.

Fourth Lesson—Introduction of script forms: Suggest delight of being able to read these stories.

By questions secure the thought and form of following:

A kid, a kid my father bought
For two pieces of money.

Write this upon the board in a large hand, good spacing, words as far apart as they can be without appearing unrelated.

Pupils will read this smoothly without recognizing the words because they know what the teacher is writing.

Through questions secure partial analysis of the sentence. What is the story about? A kid. The teacher shows the word "Kid"; underline or encircle it in the sentence. Then other words are distinguished as follows:

Who bought the kid? "Father."

What did he give for it? "Money."

How many pieces? "Two."

Now these four words are written one at a time, in a column, and named by comparison with words in the sentence. Then remove the dependence by erasing the sentence and having the words named independently.

Naming the words independently should be done rapidly by each individual as he volunteers. Each child who names them all may return to his seat to look at a book or do handwork. His work on this exercise is done. If the pupil says he does not know them all, he is asked to point out the ones he does know. The teacher makes note of names and the number of words known.

Temporary groups of class at end of fourth lesson are made, viz.: First group, all who know 4 words; second group, all who know 3 words; third group, all who know 2 words.

Now word-cards are used, 8 x 5 ins., for rapid review. Hereafter, new words are placed on word-cards.

From now on first group takes new lessons. Second and third groups go as rapidly as they are able.

Fifth Lesson—Review lesson. Add "A kid, a kid," which should be recognized by pupils unaided.

Distinguish "a" and "my." After this, words are added more slowly; never four at one time.

If the teacher wishes, she may take up all the other words in the sentence before taking the new sentence; but as words are repeated so frequently, it will be quite safe not to do so. All new words are gotten by the

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children through questions during reading lesson; they are *not* taught before. They are *fixed* by drills after.

Sixth Lesson—Words taught: *cat, ate, they.*

Seventh Lesson—Words taught: *dog, cat, bit.*

Review from beginning, to give pleasure and keep sequence in mind, as frequently as is necessary.

Eighth Lesson—Words: *stick, beat, the.*

Ninth Lesson—Words: *fire, burned, pieces.*

Tenth Lesson—Words: *water, quenched, for.*

Eleventh Lesson—Words: *ox, drank, and.*

Twelfth Lesson—Words: *butcher, killed, of.*

Total, twenty-eight sight words; time, two weeks.

No written language, spelling, penmanship, phonics, until a later stage in this work.

Emphasis on nature, handwork, reading, stories, music and games.

FROM SCRIPT TO PRINT.

As soon as the first story is thoroughly known in script, print is introduced. The teacher shows printed sheets to the children and tells them that they can easily read this new form, as they know the story.

They read. The teacher asks, at intervals, different pupils to point out words. The teacher does not print on blackboard. If the child does not know the word, questions are asked to recall the story, to establish direct association between the thought and its printed symbol.

* * * * * * * *

The first two paragraphs of the second story are given in script; later in print; and from then on print is used in reading lessons.

Script is used in written language lessons.

Second Story—The Old Woman and Her Pig. This is taken up in the same way as in the first story beginning with nature lessons on the pig, rat, cow.

PHONICS.

Forty words are now known, and phonics can be taught.

The teacher writes the word "pig" on the board. Pupils name it. Tells class to listen sharply. She says the word slowly, then more and more slowly until she has separated it into p-ig. The pupils are then asked if they can say it as the teacher did. Volunteers offer to do so. Then, "Who can give the first part?" (p) "Who can give second part?" (ig) Show letters by covering part of word on blackboard that represents sounds made, first covering *ig*, then *p*. Words are never marked.

No concert work. Each pupil should sound the word correctly and make the association between the sound and the letters. No divisions are made on blackboard; all temporary divisions by covering words.

First lesson in phonics takes a longer time than the following ones. After that one, five minutes will be sufficient.

WRITING.

The teacher writes the word "pig" on the board large. She asks if any child can write the word after it is erased. If there are no volunteers she

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writes the word again, until some one says he can write it. The pupil should stand as far from the board as he can and yet reach it easily, holding, loosely, a piece of crayon, not as he holds a pencil. He writes on a line made for him. If he has a clear image of the word as a whole and the process of making it he will write confidently, rapidly and correctly. If he begins to go wrong the teacher instantly but gently stops him and writes it again for him. Praise him for doing it correctly. If he writes correctly and forgets to dot i, don't tell him. Erase; write again, emphasizing *dot.*

Next word is "found" and is taken same as "pig." Then from these two words we get the "family" words, pound, fig, wound and wig. From way (pay, fay).

These are the "families," and are put on blackboard as learned and kept there. They are used by first group while the teacher is teaching the second and third groups.

Ask the children if anyone can write "pound." If no one volunteers, say to them, "You can write 'p' and you can write 'ound'. Now who can write 'pound'?" Someone will volunteer. If not, write it for them and erase. Same way with "fig."

LANGUAGE WORK.

Fables and short stories are taken up later and written same as the words. There is no copying. All the writing is done on blackboard until everyone in Group I can write "pig," "found" well. Then paper is taken.

THE KID.

A kid, a kid my father bought
For two pieces of money.
A kid, a kid.

Then came the cat that ate the kid
That my father bought
For two pieces of money.
A kid, a kid.

Then came the dog that bit the cat
That ate the kid
That my father bought
For two pieces of money.
A kid, a kid.

Then came the stick and beat the dog
That bit the cat
That ate the kid
That my father bought
For two pieces of money.
A kid, a kid.

Then came the fire and burned the stick
That beat the dog
That bit the cat
That ate the kid
That my father bought
For two pieces of money.
A kid, a kid.

Then came the water and quenched the fire
That burned the stick
That beat the dog
That bit the cat
That ate the kid
That my father bought
For two pieces of money.
A kid, a kid.

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Then came the ox and drank the water
That quenched the fire
That beat the dog
That ate the kid
For two pieces of money.

That burned the stick
That bit the cat
That my father bought
A kid, a kid.

Then came the butcher and killed the ox, etc.

The advantages of the McCluskey method are:

1. Its literature.
2. It goes from the concrete to the abstract.
3. It goes from the general to the particular.
4. It goes from the known to the related unknown.
5. It is extremely interesting both to pupils and teacher.
6. It arouses their imagination.
7. They are able to read other books.

Stories of Animals—First Year

How Dogs Behave.

John, can you tell us something?

Yes! The dog in this picture is an old watch-dog. He is sitting by the chair, waiting for his master, and taking care that nothing is stolen from the room.

Our old dog, Rover, is always waiting for me when I get home from school, and the way he runs and jumps and barks, you would think he wanted to eat me up.

When I throw a stick he will run and bring it up, and if I try to get it he will hold on and growl, and pretend to be very angry; but he wags his tail and winks at me, to let me know that he is only in fun.

He is a good friend to our old Tabby and her kittens; but when a strange cat comes about, away he goes after her like the wind, barking with all his might. Then the cat goes up the nearest tree and spits at him.

When the children are at play, he follows them about to take care of them. He will lie down in the shade and go to sleep, but he keeps one eye open, and if anybody comes along he is up at once to see if anything is the matter.

He loves to play with the children, and every day when nurse goes out with the baby, she gives him a ride on old Rover's back.

How Dogs Look.

Well, John, we shall be glad to hear something more about your dog to-day.

Here is a picture of Rover with a bird in his mouth. He has been trained to find the game that has been shot and bring it to his master. When he takes the bird he is careful not to bite it.

Rover has a thick coat of long hair. It is not so fine as that of a cat, but it is enough to keep him warm in cold weather.

The cat has a round head, but Rover's head is long and his nose is blunter than that of the cat. Rover's ears are a great deal larger than those of a cat and they hang down by the side of his head. Some dogs have ears that stand up and point forward.

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My sister has a little white terrier, Gyp, whose hair is silky and much longer than Rover's, and it hangs down over his eyes in a very funny way. He can see very well for all that.

Dogs do not hunt for rats and mice, but if a rat comes in sight when Gyp is about, he gives one bound and a snap, and there is a dead rat. When Gyp is asleep, if we call out "Rats," he springs up and rushes about as if he were crazy.

When a cat is angry she lashes her tail from side to side, but when a dog is angry he holds his tail out straight and stiff.

When a dog is glad he wags his tail as though he would wag it off. When the little black-and-tan dogs are very glad, you can't tell whether the dog or the tail wags most.

The cat does not like to go into the water, but Rover likes nothing better than to swim out after a stick which I have thrown in. In summer he goes into the water every day to keep himself cool and clean.

How Dogs Use Their Feet.

To-day, John, we should like to hear something about the dog's feet and how he uses them. Have you something to tell us?

Yes! One way the dog gets about is by swimming. Last summer little Harry fell into the river when no one was near by, and Rover swam in and brought him out.

The folks made a great fuss over him then; but he did not mind it; only he seemed glad that Harry was not hurt.

I find my dog has just as many toes as a cat. His nails are longer than those of the cat, but not so sharp. They are big and strong, but he cannot draw them back into his foot.

He cannot climb a tree, as his nails are not sharp enough, but he can dig a big hole in the ground when he is after a rabbit or a squirrel.

The bottoms of his feet are harder than those of a cat, and he can run all day in rough places without hurting them.

With his hard feet and long nails he makes more noise when walking than a cat; but then it is no matter, for he does not have to catch mice and rats.

Rover cannot open a door, but he raises his paw and raps or scratches until somebody comes and opens it for him.

Ask him to shake hands and he will hold out his paw as well as anybody can, though he has not learned which is his right and which is his left.

When Gyp is hungry, it is funny to see him. He will whine a little, and then sit up straight and hold out his paws like a little beggar.

Then if you offer him something to eat, he sniffs at it, and, if he does not like it, turns up his nose and goes off. He likes candy as well as I do.

How Dogs Use Their Jaws.

To-day we would like to find out about a dog's mouth and teeth. John, have you something to tell us?

Yes! When playing with Rover, last night, he opened his mouth, and I had a good chance to see what was inside?

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His teeth are like those of the cat, only larger and stronger, and his jaws are so strong that tramps run away when he offers to bite them.

When Lion, the old bulldog, gets his grip on anything, the only way to make him let go is to open his jaws with a bar of iron.

The cat uses both its claws and teeth in catching game, but the dog can bite so much harder that he does not need sharp claws to help him much.

When a dog eats, he swallows large pieces of meat without chewing, and he will crush a bone to get all the meat and the marrow inside. After he has eaten off the meat, he often swallows the bone.

His tongue is not so rough as that of a cat, but he laps water and milk with it, and he loves to lick the hands and faces of his friends.

In summer, when it is very hot, the dog does not sweat as we do, but he opens his mouth and pants, and the water runs off from his tongue.

When the dog is well, his nose always feels cool; but if he is ill, his nose gets warm.

It is funny to see how Rover will act when someone comes around whose looks he does not like.

He just stands straight and his hair begins to rise. Then he raises his upper lip so as to show his long teeth, and give a very low growl.

Next he steps forward a little and gives two or three short and snappish growls, and then somebody had better look out.

One day my mother was coming up the lane, and met a tramp, who made a motion to take hold of her. Rover made one spring, and his jaws snapped. The fellow yelled, and as he ran away he limped as though he had been hurt. Since then he has not been about.

How Dogs See and Smell.

I think John has something new to tell us about his dog to-day. Let us listen to him.

I have looked at my dog's eyes, and I find that the pupil is round, like mine, and does not shut up into a streak, as in a cat.

The dog does not see so well in the night as a cat, but his sense of smell is much more keen.

My uncle has a pointer dog named Grouse, and one day I went out with them to hunt quails.

Grouse would run all about until he smelled the birds, and then he would creep along a little way and stand still, with his nose pointing forward.

My uncle would then come up with his gun, and when he was ready, the dog would go slowly forward and scare the birds up, when my uncle would shoot them.

A dog will follow the track of his master for a long distance, and hounds will follow the track of a wolf or a fox or a bear, so that the hunter can come up with it and kill it.

Rover is a good watch-dog, and if he hears or smells anybody about in the night, he makes a great racket.

He knows where the other animals belong, and if a cow or a pig gets into the garden or yard he goes and drives it out.

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How the Horse Looks.

The horse is much larger than the cat or dog. His home is in the stable, and he does not come into the house, as they do.

His head is long, and, when he puts his nose to the ground, the top of his head is just about as high as the top of a flour barrel.

His eyes are large and round; his nose is much wider than that of a dog, but he has smaller ears than some dogs, and they stand up straight.

Upon the top of his head, and along the top of his neck, he has a thick bunch of long hair, which is his mane.

He has a broad, strong back, and can carry a man all day without being very tired. There is room upon his back for two persons, and sometimes two ride at a time.

He has long legs, so that his head is about as high as the top of a man's hat.

He is covered with a thick coat of short hair, and this keeps him warm, except in very cold weather, when he needs a blanket.

Instead of claws, he has hoofs, hard like bone, so that it does not hurt him when he trots or runs on the ground.

When horses work, or travel over a hard road, they have iron shoes nailed to their hoofs, so that they will not be hurt by striking the stones.

The hoofs have no feeling on the outside, and it does not hurt the horse to have these shoes nailed on. They grow like our nails, and must be pared once in a while.

The horse can paw with his forefeet, and kick with his hind ones, and when he kicks hard he breaks things. He has a tail covered with long hair, and this he uses as a switch to keep off flies in summer.

Suggestions for Nature Study—First Year.

THE WORK OF THE FIRST GRADE: It will be noticed that the work of the first grade and all the primary grades is classified under two heads, namely, Spring term and Fall term. This is very important as well as convenient. It will naturally follow that during the Spring term the 1B class who entered school in September, and the 1A class who entered in February, will be covering practically the same work. The 1B pupils will be able to do a little more intensive work in certain directions because of that which they have gained during the work of the Fall term. In all other respects the work of the two may be the same. It may not be out of place here to repeat specifically the caution which has already been made in general terms: The teacher of the first grade should under no circumstances make a list of plants and animals, and other objects to be taken up during the term and then attempt to go through the list with the class. From the things which are mentioned in the syllabus she may wisely select that one with which her personal experience has been most intimate. If she has had no personal experience with any of these topics let her first obtain such experience with that thing which most appeals to her. From this as a center work will naturally radiate and develop. An elementary study of seeds belongs here as a first step. A simple seed with large parts like

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the squash or the bean should be soaked until the cotyledons (term not to be used in class) are somewhat softened and the seed covering is easily removed. The children at once discover that the seed consists of two large, somewhat softened parts, and if a seed like the squash is used they can easily notice that upon these halves there are markings which somewhat resemble the veins of leaves. They also discover that these two parts are held together by something which resembles a tiny stem, to which are also attached two tiny white leaves carefully folded. Here the children find a suggestion of a little plant and naturally are delighted with the discovery. Attempts at expressing what they have seen with pencil or crayon or water color as well as by words assist at this step. Other seeds are placed in moist earth, preferably by certain children in the presence of the class and teacher, and results are awaited. When the little plant appears above the ground the resemblances and differences between the cotyledons as they observed them on the first examination and their apparance now form an interesting topic for consideration and discussion. Then the growth of the plant from day to day and week to week is noted, not with technical detail, but in a general way. In selecting seeds it is well to choose not only those with large parts and therefore easy of study, but also such as will develop into mature plants within a few weeks, because when such plants are selected the pupils will be able to see the whole cycle of life rather than a small fragment of it. For this reason the radish is better than the sunflower, the white bean is better than the lima bean, and the squash is better than the apple or maple.

The unfolding of buds furnishes another interesting field of inquiry and investigation. Buds as large as possible are wisely selected, and the first study may well be made as soon as the warm days of early spring cause them to swell. If buds like those of the horse chestnut are taken, the pupils easily discover the sticky substance adhering to the outside of the scales, and readily draw the inference that this varnish acts like a gum as a waterproof covering. Underneath the scales they find a packing of material resembling cotton, and the resemblance of this to the quilt upon their own beds leads to a natural and correct conclusion as to the use of the packing material in the bud. They also discover wrapped away carefully tiny folded leaves, and are delighted to discover that the leaf is all in the bud. As other buds like those already studied continue to swell and burst forth within the schoolroom, the children see the fulfilment of the expectations formed from the preliminary study and get correct ideas of development as well as interesting and valuable lessons concerning nature and her provisions.

The study of blossoms and plants in blossom makes a third interesting field. Here the line of work is not an analytical one; it is not the counting of the parts of the flower, it is the noting of its colors, its shape, its beauty, its odor. Where opportunity permits they also discover that flowers have a great attraction for bees and other insects; they learn to recognize various plants and blossoms as they recognize their friends, members of their family or members of their class, not by analyzing the features

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but by certain differences and resemblances which best appeal to each individual. In thus learning to recognize different plants and flowers they are gathering quite rapidly a large amount of material which in higher grades can be used to advantage in an elementary sort of classification. Indeed they are now unconsciously making a classification.

The course of study and syllabus also suggests certain animals for study in the first grade. The way in which animal study is best taken up may be inferred from what has already been said respecting the study of plants. In studying a cat, a dog, a canary or a sparrow, those points which appeal to the child are the points to be mentioned and not necessarily those which appeal to the naturalist.

In all of this work care should be taken to remember that "he who thinks chiefly of his subject teaches science; he who thinks chiefly of his pupils teaches nature study." Nature study is what we are trying to teach.

Nature Study—1A and 1B

NOTES FOR CONVERSATION LESSONS.

THE HORSE.

Horse can run, trot, hunt, carry people, drink, swim, race, gallop, jump fences, eat, sleep, draw loads, paw, bite, plough, kick.

Use, habits, appearance, dependence, how serve us and treatment required for service: Shelter, barn, blanket, bed, fodder, grass, hay, oats, two quarts of grain.

Characteristics: Strength, affection, patience, intelligence (very nervous), iron shoes, the blacksmth.

Kinds: Circus (tricks, dance), kneel, stage, hunting, fire, car, ambulance, saddle, policeman's, war, cart, Indian, Shetland, canal, derrick, race, Arab, swift, loving, wild, lasso caught, tamed.

Lives in stable (not in house like cat), lies on dry hay, clean horse with comb, brush; man's best friend, works roads, ploughs, draws sleds, sleighs, gives us pleasure riding, driving, delivers goods.

Parts: Head long (face long), ears, eyes, nostrils wide, velvet nose, mouth very large, neck long, mane, hair on neck; body: broad, strong back (carry people all day, does not tire); legs: slender, long (running); hoofs: grow like our nails (feet) hard case of horn; tail: covered with long, coarse hair, switch flies off); body: covered with thick coat of short hair (used in plaster), keeps him warm in all but coldest weather, he needs blanket (while standing).

Treat horses kindly, do not jerk reins (hurts mouth) nor whip nor drive fast up or down hill, lames them; give them plenty of hay, oats, water (horse needs two large buckets at a time), puts mouth in water and swallows whole mouthfuls (should not drink until cooled off), horse likes to eat grass in Spring; hoofs used for glue.

Habits: to roll, play, run, whinny, neigh, walk, trot, gallop, obey signals (let children whinny like horse).

Pieces: Dapple-gray, hop-hop, blacksmith, tally-ho, stick laying, fence, trough, grass.

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Dog.

Drive cows, guard house and baby, as pet, growl, do tricks, beg, whine, lick, swim, eat, run, jump, go errands, find children, play, catch rats, carry parcels, wag tail, bark, draw carts; head larger and longer than that of cat, large hanging ears, kind eyes, long nose, large teeth, baby called puppy, greyhound swift, jumps high; setter and pointer to hunt; Eskimo dog draws sleds; spitz (white almost always), fox terrier, black and tan, mastiff (large), pug, dachshund, sheep dog, Newfoundland, poodle, bulldog, foxhound, skye (hairy), spaniel.

Eats meat, bones, bread, candy; drinks water; all colors, jaws strong, can grip like iron, crush bones and swallow; legs and body covered with rough, curly or smooth hair; forgiving, affectionate, trustworthy, docile, clever; wonderful scent; when hot, pants and water runs off tongue.

Squirrel.

Flying squirrel nine inches in length, lives in woods or parks; gives little chirpy bark; kept for pet in cages, gambols, plays; color gray, white breast, black or brown, covered with fur, fur made into muffs and tippets; head (ears stand up) small and pointed; hears well; eyes bright and black, nose long, whiskers like cat, mouth has four long front teeth and also pouches; body ten inches long and tail ten inches, tail bushy and holds it over back; four legs; feet, long, thin, five fingers like toes on fore feet of cat, with sharp curved claws to hold on branches.

Food: nuts, acorn, seeds, berries, fruit, corn, raw vegetables, drinks water and milk.

Lives in nests of grass or moss lined with leaves in the hollow of trees or branches, sometimes robs birds' nests of eggs or eats young birds.

Little bag of skin on each side of cheeks just back of mouth, packs it with nuts or corn by means of forepaws; when mouth is shut bags are closed, when he gets home he puts paws against cheeks behind the bag and pushes nuts out, holding mouth open to let them drop; playful, frisky, runs along branches of trees.

Dainty eater, sits on hind legs and holds tail up, nut in fore paws, gnaws shell and pecks meat; says chip, chip.

Can jump, climb, run, scratch, gnaw.

Hen and Duck.

Where does the hen live? Can a duck live on land? Get food? What does it like best to do? Ever see her swim? Which walks better? Where does she try to get when it rains? Which is better fitted for water? How is the duck fitted for water? How does she look when wet? Cold uncomfortable clothes of hen are wet through.

The duck's clothes do not wet through. Duck keeps water feathers oiled. Her body has a close, warm under-covering of down; hen has not boat-like shape of duck; floats easily on water; moved along by two strong, broad paddles which push against water and so she swims along. If children could draw fingers through a vessel of water, first with the fingers closed and then opened, they will understand the use of web. How does the

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hen get her food? Why does she need a hard beak? Where does the duck like to feed? (Ponds, wet and muddy places.) Duck separates food from mud and water by fringes, bill acts as strainer when she seeks food. Duck eats worms, insects, fish. Finds most of these things in water, often at bottom of pond or ditch. Dives and stretches neck so as to reach bottom. Use eggs and flesh for food; down and small feathers for pillows.

Duck and hen nearly same size, both two wings and two legs, feet of both three toes in front, one behind, both covered with feathers; duck has no red comb, long flat bill instead of beak; head greater length, round in shape. Duck has smooth curved neck, long, gently curved body, pointed tail. Hen's body more nearly round, tail more full, legs longer and further front. Compare colors, speak of lovely hues of drake. Duck has webbed toes.

Our Flag. For 1A or 1B.

Teacher holds flag, up—

What is this? I will write flag on board. What word did I write? We will talk of *our* flag to-day. What are the colors in the flag? The part with the colors is called the banner. The part I hold it by, the stick, staff, or pole. Stick so soldiers can wave it, carry it high up or put over shoulders—to fasten to window-sill, to ship, school or buildings.

The stick is to hold banner so it can blow in the wind.

Banner made of cloth or silk. Notice red and white (stripes), white stars on blue square, called: Star Spangled Banner, Red, White and Blue.

Stars and Stripes.

Each country has a flag. Irish, Green; German, Red, White, Black, etc.

When do we see flags? Holidays, as 4th of July, Decoration Day, parades, soldiers' graves.

Why, in parades, do soldiers ever cover old bits of torn flags? Because men fought and died for Our *Flag*—of the Free—torn by guns and cannons. Precious because it is not what the flag is made of, but what it stands for (means), that makes soldiers fight for it.

Amercan ships fly it.

Review.

Why more precious than any other piece of cloth?

Colors.

Is each half red and white? No; stripes red and white—oblong—point banner, stick, etc.

Poetry.

This is my country's flag,
  And I am my country's boy;
To love and serve it well,
  Will ever be my joy.
Now let us all salute the flag
  That floats in glory here,
The flag that Washington so loved,
  The flag to us so dear.

Betty Ross.

George Washington: tell little if possible. Rise and salute. Sing chorus. Three cheers for the Red, White and Blue.

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READING.

The flag is red, white and blue. It is my flag. This flag is pretty. The flag is on the boat. The flag will fly. Have you a flag, Ned? Yes; my flags is little. My flag is not new. Tom has a flag in his hat. Here is Ida.

We are going to play soldiers (new word). Soldiers have flags.

Fred has his drum. Baby has a soldier hat. I am a big soldier. Ned has a cap, too.

Let us go to mamma. She likes soldiers. Here are soldiers, mamma! Mamma says, I see the soldiers. You are pretty soldiers! You have flags and drums.

Run away, Dash—you cannot play, Do you see my drum, papa? Hurrah! Hurrah!

CORN.

Material. Cornstalks. Corn with husks and without. Corn meal. Pictures of corn fields and of crow.

Outline. I. Recognize and name. Maize or Indian corn. Why so called?

II. Where it grows. Planted in the spring in country fields; in many long rows. Protected by scarecrows when young.

III. Description:

a. Roots—many like threads or strings.

b. Stem—smooth, stout, tough, jointed, tall.

c. Leaves—long, narrow, tough, clasping stem. Green, bleaching to brown.

d. Ear—seeds of plant called kernels, arranged in rows on central part called cob. Surrounded by many layers of tough, thick husks. Whole is called ear. Kernels yellow, sometimes red.

Lesson II. I. Adaptation to surroundings:

a. Many fibrous roots hold the tall plant firmly in its place.

b. Tough stem not easily broken by wind, rain or weight of ears.

c. Long, tough leaves not easily torn or broken.

d. Seeds covered by many layers of husk to protect from insects and animals, and also from wet and cold.

Lesson II. Uses: Stalks and leaves as food for animals. Kernels taken from cob; ground into meal and used as food for people and animals. Green corn before kernels have hardened is boiled and used for food. Popcorn sometimes used as food.

Kernels saved from year to year used as seed.

Cob; used as fuel.

Literature: Tell or read selections from "Hiawatha's Fasting," "Blessing the Cornfields."—H. W. Longfellow.

Selections from "The Corn Song."—J. G. Whittier.

"How the Corn Grows" (finger play).—Emily Poulsson.

Tell stories of primitive ways of raising corn and of preparing it; also Story of Pilgrims' first finding the Indian Corn.

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Hygiene—1 B.

According to the *Course of Study,* detailed instruction should be given to pupils in regard to cleanliness of the skin, eyes, ears, nose, mouth, hands, neck, body, nails and hair; the practical and aesthetic importance of cleanliness of hands and face at meal time; the importance of a warm bath, and the proper use of towel and soap.

BATHING—NECESSITY FOR SAME.

This morning as I came to school I saw a little birdie. He was standing right in the middle of a tiny pond which the rain had left in the street. What do you suppose he was doing there? Why do you think he needed a bath? These little street birds (the sparrows) take baths just as often as they possibly can. Usually after a rain storm we see many of these little fellows bathing in the puddles. Canary birds bathe every day; sometimes twice a day. Little children should bathe just as often as the canary birds do. Some children think that clean faces and hands are all that is necessary; but this is not so. The whole body needs bathing.

Every part of the body should be washed at least once a day. The very best time for a bath is early in the morning, just after rising. Some people like to jump right into the bath-tub; others prefer washing part of the body at a time and drying quickly with a rough towel. Either way is good. A good, brisk rubbing early in the morning makes us feel better all day. Then we feel like doing a good, hard day's work. Sometimes in the evening when we are very tired, a nice warm bath is refreshing. It helps us to sleep well.

THE SKIN.

All over the skin we find little holes. What are these holes called? These little pores are the ends of tiny drain pipes, which are used for carrying away the perspiration. If these little pores become clogged with dirt they cannot do their work well. This causes people to become ill. We perspire a great deal in the hot summer weather; so in order to keep well we should wash very often. Then these little pores will always be clean and open.

HANDS AND NAILS.

Our hands need washing more frequently than any other part of the body because we use them so much. Little particles of dust collect on them very often. They should always be washed before and after school; also before every meal.

NAILS.

What do we find growing at the end of each finger? How can we keep the nails clean and neat? It is a good thing to have a nail brush. After washing the nails thoroughly, brush them well. This will make them very clean and shiny. A neat child must have clean nails.

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THE HAIR.

We should always be careful to comb and brush our hair neatly. It should be brushed very often during the day; *always* before meals. This constant brushing will make it grow very smooth and glossy. The hair should be washed every week or two to keep it clean.

THE EYES.

How many eyes have you? Why do we need them? We should be careful not to hurt our eyes in any way, because they are easily injured. The upper and lower lids cover and protect them. The eyebrows keep the perspiration from rolling into the eyes. When we wink our eyes the tears wash them. In washing our faces we should take care not to let the soap get into the eyes. Soap makes them smart. Close them when washing, and use only fresh, clean water.

THE MOUTH.

With what do we eat and speak? What do we find in the mouth besides teeth? Yes, we use the tongue in speaking and also in tasting our food. The mouth is like a little mill. The lips are the two doors and the teeth are the little grinders.

THE TEETH.

Of what use are our teeth? We should always try and keep them very clean. How can we do this? Yes, we must brush them well several times a day. It is best to brush them after every meal and before going to bed at night. This will preserve the teeth and keep us from having toothache. Then they will always look like two rows of little pearls. Teeth should never be picked with pins. Pins scratch and break the enamel, or covering, of the teeth, causing little holes to come in them. These little holes soon become large ones. Then the dentist must fill them. Filling is sometimes a very painful thing. If the holes are not quickly filled the whole tooth decays and has to be drawn out.

THE NOSE.

As we taste with our mouths, so we smell with our noses. We also use our noses for breathing. Down the center of the nose we find a thin wall. This wall separates the nose into two parts, called nostrils. Through these the air passes down into the lungs. We can detect good air from bad by the smell. We can also tell good food from bad food in the same way. It is necessary to keep the nostrils clean in order to do this. For that reason we should always carry a handkerchief with us. How many children bring a handkerchief to school every day? How many will try not to forget to bring one to-morrow?

THE EARS.

Where are the ears? Touch them. Of what use are they? We should take good care of our ears if we wish to hear well. Never use a pin to clean them. Keep them clean by washing them often and well.

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Typical Examples in Arithmetic—2A

ADDITION.

FOURTH MONTH.

Week XIII:

			342	367	352
312	324	426	453	342	436
467	412	314	627	472	464
314	362	372	428	541	735
414	427	276	132	347	575
176	131	414	41	545	10

Week XIII:

463	467	427	347	318	318
254	367	323	476	210	813
767	424	560	372	823	172
342	136	367	343	182	313
14	327	143	525	141	541
123	141	127	426	186	412

Week XIV:

			354	412	316
243	342	548	416	316	428
857	158	327	721	427	721
332	721	412	328	378	183
101	134	320	800	200	14
424	116	634	18	141	101

346	432	123	102	322	324
634	323	456	543	412	132
721	321	781	678	135	426
128	546	234	784	528	341
381	187	567	213	872	143
16	31	811	12	71	116

Week XV:

812	835	636	578	432	827
738	574	234	385	642	384
150	366	748	726	851	426
604	488	456	387	384	828
462	241	465	124	823	31
113	110	34	110	222	142

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855	625	345	428	427	167
376	868	277	731	321	176
764	85	72	102	138	187
428	345	827	134	321	817
456	375	278	821	142	724
141	121	132	123	187	132

Week XVI:

187	324	424	438	368	312
62	823	367	821	824	453
864	110	728	143	731	672
182	420	342	204	546	713
267	368	443	876	321	814
110	824	211	612	412	81

142	458	352	284	324	823
872	917	442	807	432	427
104	367	316	612	868	323
188	112	872	708	726	416
212	341	143	65	434	427
14	101	221	231	12	520

FIFTH MONTH.

Week XVII:

421	342	424	324	923	940	921	341	347
329	139	316	416	212	321	314	926	428
182	912	412	813	560	129	413	383	321
321	121	918	226	427	432	831	463	167
192	328	625	729	312	121			

Week XVIII:

				649	594	496	847
428	987	456	547	426	678	828	228
375	165	865	359	938	592	798	829
942	923	937	926	872	827	345	487
764	385	842	834	768	384	567	765
456	928	645	387	51	111	369	487

Week XIX:

	859			345			672
539	187	168	186	569	491	736	574
376	345	906	437	488	736	765	368
989	839	709	236	292	512	575	921
428	316	759	191	872	689	895	428
321	926	325	119	114	787	893	321

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Week XX:

487	385	483	238	916	593	328	834
95	416	512	451	861	666	419	912
385	586	437	258	459	73	387	897
486	79	216	309	384	81	818	685
793	324	505	92	818	169	265	437
43	587	726	85	212	999	769	928

SUBTRACTION.

FOURTH MONTH.

Week I:

263	426	428	247	258	352	461	422
152	213	315	124	121	245	234	316
340	421	523	324	424	340	432	451
214	215	217	212	228	225	217	236

Week II:

348	439	430	541	532	523	424	345
221	222	213	324	425	416	217	228
226	217	528	449	340	521	432	343
119	111	122	233	224	435	226	127

Week III:

439	520	421	332	543	244	425	346
221	312	223	224	325	126	227	228
237	346	547	538	439	540	431	432
129	121	312	423	224	315	226	217

Week IV.:

520	451	342	323	534	325	456	237
111	142	153	214	415	226	327	128
538	426	325	454	342	453	234	435
219	218	127	246	126	227	128	219

FIFTH MONTH.

Week I.:

512	603	623	513	404	603	411	524
491	582	291	182	272	462	271	383

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335	504	615	426	637	548	423	342
192	251	361	272	383	294	219	113

Week II.:

625	437	543	452	544	754	462	365
463	372	282	291	327	382	391	184
467	623	637	647	725	564	474	584
239	231	342	154	316	372	283	293

Week III.:

814	921	734	743	933	724	718	423
693	280	372	661	751	362	356	342
826	343	898	462	424	322	465	543
492	129	329	236	219	108	326	222
734	685	767	584	295	694	822	952
412	541	634	420	173	253	143	728
864	793	403	732	594	945	876	486
215	251	201	426	247	423	627	349
		834	318	752	846		
		427	209	428	727		

MULTIPLICATION.

FOURTH MONTH.

Week I.:

Multiply the following numbers by 3:

462, 363, 470, 271, 372, 473, 280, 481, 382, 283, 90, 91, 92, 93.

Multiply the following numbers by 4:

60, 61, 162, 470, 271, 172, 80, 381, 821, 901, 912.

92	106	113	204	212	30	31	400	41	60
5	5	5	5	5	5	5	5	5	5

50	351	661	470	71
5	5	5	5	5

Week III.:

70	71	72	280	81	82	90	91	92	80
4	4	4	4	4	4	4	4	4	5

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81	901	913	350	51	401	241	130	431	11
5	5	5	5	5	5	5	5	5	5

Week IV.:

9	10	11	12	20	21	22	10	11	21
4	4	4	4	4	4	4	5	5	5

322	331	432	531	632	30	340	241	142	440
4	5	4	5	4	5	4	4	4	5

FIFTH MONTH.

Week I.:

315	616	217	118	419	25	26	27	328	29
2	2	2	2	2	2	2	2	2	2

35	236	637	38	39	45	746	473	481	49
2	2	2	2	2	2	2	2	2	2

Week II.:

554	561	572	584	59	365	266	167	468	669
2	2	2	2	2	2	2	2	2	2

214	115	316	417	118	193	242	251	264	276
3	3	3	3	3	3	3	3	3	3

281	291	341	351	361
3	3	3	3	3

Week III.:

751	783	765	777	851	861	872	884	896	958	96	972
2	2	2	2	2	2	2	2	2	2	2	2

823	844	86	88	91	932	591	954	973	132
4	4	4	4	4	4	4	4	4	5

141	153	172	194	221	243	262	282	318	33
5	5	5	5	5	5	5	5	5	5

351	371	391
5	5	5

Multiply 982, 992, by 2.

Multiply the following numbers by 3:

441, 451, 463, 472, 483, 494, 542, 551, 561, 56, 57, 58, 59.

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Multiply the following numbers by 4:

53, 23, 244, 253, 126, 127, 128.

Week IV.:

Multiply the following numbers by 4:

362, 383, 394, 492, 48, 47, 566, 593, 588.

Multiply the following by 5:

534, 644, 651, 167, 169, 273, 275, 377, 379.

English—2A

May.

FIRST WEEK.

Story for reproduction: Arbor Day Story. "The Apple Trees," by E. E. Hale.

Conversation: What we do in our gardens this month.

Poem: Bed in Summer. R. L. Stevenson.

Picture: The Nursery. Ernest A. Waterlow. (A picture of spring-time.)

Reading to Children: The Three Sisters with Glass Hearts. From "Fairy Tales for the Second School Year," by E. R. Shaw.

SECOND WEEK.

Story for reproduction: How the Beans Came Up. From "In the Child's World." E. Poulsson.

Conversation: Conversation on flowers brought into the school room.

Poem: Bed in Summer. R. L. Stevenson.

Picture: See note.

Reading to children: The Apple Branch. Classic Stories for the Little Ones. Mrs. Lida Brown MacMurry.

THIRD WEEK.

Story: The Goose that Laid Golden Eggs.

Poem: Bed in Summer. R. L. Stevenson.

Conversation: Conversation on flowers brought into the class room.

Conversation on "Going to the Woods."

Picture: See note.

Drills: See "Suggestions for Drills."

Reading to children: "Drakesbill and His Friends."

Puss in Boots.

FOURTH WEEK.

Story: The Cock and the Jewel.

Poem: Bed in Summer. Robert L. Stevenson.

Conversation: Why we keep Decoration Day.

Picture: See note.

Drill: See note.

Reading to children: Re-read stories selected by the Children.

June.

FIRST WEEK.

Story for reproduction: The Story of Clytie.

Poem: Daisies. Frank Dempster Sherman.

Conversation: The games we play.

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Picture: The Balloon Ascension. Dupre.
Drill: See note.
Reading to children: The Summer Sun. R. L. Stevenson.
My Shadow.

SECOND WEEK.

Story for reproduction: The Dog and his Shadow.
Poem: Daisies. Frank Dempster Sherman.
Conversation: A trip to the seashore.
Picture: Return of the Fishermen. Henry Bource.
Reading to children: The Pigeon and the Owl.
The Amber Witch.

THIRD WEEK.

Story for reproduction: The Golden Touch.
Poem: Daisies. Frank Dempster Sherman.
Conversation: How we prepare strawberries for the table.
Readng to children: The Pigeon and the Owl.
Classic Stories for the Little Ones: Mrs. Lida Brown MacMurry.
Discontent.
Picture: See note.
Drill: See note.

FOURTH WEEK.

Story for reproduction: The Golden Touch.
Poem: Daisies. Frank Dempster Sherman.
Picture: "The Haymakers." Dupre. Also "The Haymaker," Dupre.
Conversation: What we hope to do in vacation.
Reading to children: Re-read stories selected by the children.

NOTE.—Where no picture is mentioned, pictures in the reader may be used.

SUGGESTIONS FOR DRILL.

"The correct form of a few of the incorrect expressions common to the class should be made the basis of oral drills."

It is impossible to indicate just what drills shall be taken each week, as the teacher must be guided by the needs of her class.

The spirit play can be utilized in making the drills interesting to the children. A few little plays for this purpose are here suggested.

To correct "I done it."

The teacher has two cards. One card has picture of a Katydid on it. The other card has no picture.

Teacher says, "This little grasshopper is called a Katydid, because she says 'Katydid.' This is how she says it, 'Katy did, she did, she did, she did, she didn't.' Now you can play you are Katydids. If I show you this card (showing Katydid picture), you must say 'Katy did it.' If I show you this one (showing the other card), you must say, 'Katy didn't,' and I shall try to catch all the Katydids I can. If you say the wrong words 'you are caught.'"

Teacher then calls upon different rows of children to stand, and *quickly* shows each child a card.

It takes but a few minutes to go "round the class"; the children enjoy the lesson and hear the correct expression many times without being wearied.

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Nature Study—2A and 2B

MAY.

First Week. Onion, hyacinth. *Second Week.* Tulip, crocus.
Third Week. Strawberry, cherry. *Fourth Week.* Currant, raspberry.

JUNE.

First Week. Asparagus, lettuce.
Second Week. Buttercup, jack-in-the-pulpit, columbine, wild geranium.
Third Week. Crocus, snow-drop, star-of-Bethlehem, pink.
Fourth Week. Azalea, sweet-pea, honey-suckle.

DEVELOPMENT OF BULBS.

Onion, hyacinth, tulip, crocus bulbs placed in moist sawdust, soil or water. Observe the development of the roots, stem and leaves. From the bottom of the bulb, roots descend into the soil to absorb moisture and other matter from it, while above, leaves are sent up to digest and convert these matters into real nourishment. As fast as it is made, this nourishment is carried down to the bottom of each leaf. The thick leaf-bases crowded together make up the bulb. After having done its work, the blade dies off, leaving the thick base as a bulb-scale.

STRAWBERRY.

The strawberry is a small fruit growing on a low plant running on the ground. It has a red berry. It grows wild in all parts of United States. The berry has a sour taste, but, by combining sugar with it, forms a delicious dessert.

CHERRY.

The cherry tree sometimes grows one hundred feet high. The parts of the fruit are skin, pulp and seed. The cherry can be used fresh, canned and dry.

CURRANT.

The currant is a small kind of grape. Both red and white currants grow on bushes and are also trained against walls. Those trained against walls produce larger frut. Currants grow in clustered bunches. The berries are eaten raw, used in pies or jelly.

RASPBERRY.

The raspberry loves a rich soil and is partial to shady situations. The berries are red, yellow and white. They are used for sauce and jellies. Also for making or flavoring many kinds of sweetmeats. It is prepared as medicine in cases of fevers and other diseases.

ASPARAGUS.

The asparagus is an herb with a stem unarmed in some, in others thorny. It is very much branched with numerous bristle-like leaves. They grow on banks of rivers, on the sea shore, in meadows and especially in sandy soil. It is also in general cultivation as a garden vegetable. Its young shoots, which first sprout from the earth, form a much-esteemed article of food, which, however, is only in a slight degree nutrtious.

LETTUCE.

The lettuce has a leafy stem, oblong leaves, a spreading flat-topped panicle with yellow flowers. Lettuce is easy of digestion and moderately nutritious, and is generally eaten raw with vinegar or oil. It is also used as a boiled vegetable.

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Buttercup.

This flower is found in the meadows and blooms from May to June. The petals are yellow and five in number. The leaves are divided and cut.

Columbine.

The columbine is found in the woods and grows from twelve to eighteen inches high. The stems are branching. The leaves are much divided. The flowers are large and of a bright red color, yellow within. This flower gives the nodding effect. The corolla is composed of five petals, which are red without and yellow within.

Jack-in-the-Pulpit.

These quaint little preachers in their delicate pulpits grow in the woods. Sometimes these "pulpits" are of a light green color, stained with purple. This plant is known as the "Lords and Ladies" by the children, the purple-tinged ones being known as the "Lords" and the light-green ones as the "Ladies."

Wild Geranium.

This plant grows in the open woods and shaded roadsides. The stem is erect and hairy. The leaves are five-parted. The flowers are pale pink or purple and rather large.

Crocus.

The crocus rises from a corm or bulb. They flower in the spring and grow in gardens. They are of a violet, purple, white or yellow-striped color.

Snow-drop.

The snow-drop is a white, drooping flower in the form of a bell, which derives its name from its resemblance to a lady's earrings or drops, as they were formerly called. A single flower grows on a long stem.

Star-of-Bethlehem.

The star-of-Bethlehem is bell-shaped and grows in a cluster. It is a pretty white flower and is cultivated in gardens.

Pink.

The pink is rather large and showy. They are of a red, pink or white color. The petals have long claws enclosed in the tube of the calyx. The stem is from four to eight inches high. The leaves are lance-shaped.

Azalea.

The azaleas are named from the dry places in which they grow. They are large, handsome, bell-shaped flowers. They are very fragrant and grow in large clusters of white, orange and purple.

Sweet Pea.

They grow two or three on a stem. They are sweet-scented and are cultivated for ornament. The flowers are pink and white.

Honeysuckle.

The honeysuckle is a shrub about four inches high. The leaves are oblong-shaped and arranged opposite one another. The flowers are yellow, tinged with red and clustered in three's at the summit of a stem or in the anvils of leaves. The corolla is funnel-shaped. The flower is noted for its abundance of nectar. The lower part of the corolla is deeply colored, thus advising the bee of its secreted treasure.

Reference books:

How to Know the Wild Flowers, by Mrs. William Dana.

How Plants Grow, by Prof. Gray, M.D.

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Study of the Horse—2A and 2B*

Almost the first game a baby plays is "horse." A string around a chair and there is the play-horse! another chair and there's the carriage! and the little one rides away as happy as a king.

When he is a little older, he plays horse with his companions, and prances gaily and shakes his bit, and whinnies loudly, all in imitation of the horse. And sometimes, when he grows to be a man, he does not really know much more about a horse than he did when playing as a boy.

It is supposed the Arabs were the first to appreciate a horse's intelligence and to treat him accordingly. They kept the history of their horses written on tablets of ivory, and traced their parentage back to the time of the Pharaohs. They were extremely thoughtful of their comfort, and used to take better care of them than they did of their wives and children.

Constant companionship with man made the Arabian horses quick to understand the meaning of words. Constant kindness made them fearless and brave and obedient. Wherever man would go, his horse was ready to carry him, for it felt safe in its master's presence.

The most intelligent specimens of horses we have to-day, are descended from Arabian parentage. The wonderful "Jim Key," probably the best educated horse living, whose knowledge is almost human, had an Arabian mother of almost incredible intelligence. Anyone who has ever seen "Beautiful Jim Key" spell words, give correct answers to mathematical problems, and do the marvelous things he does, cannot but feel there is an intelligence in horses that man has never understood or appreciated.

Intelligence in horses varies, just as it does in dogs and cats and birds and little boys and girls. There are bright boys and stupid boys, and there are bright horses and stupid horses. A horse often seems stupid because its owner has never been bright enough to understand it. How many people ever watch their horse to see what its movements mean? The ears express a horse's feelings to a great degree. In surprise or fear the ears are pointed forward in watchfulness. If uncertain, the ears turn forward and backward, listening to every sound. If angry, how quickly the ears flatten back against the neck. If unhappy or discouraged, how the ears droop down and out.

A horse that is interested has an alert ear. Drive a horse on a road he has never traveled before, and notice how interested he is in all the sights and sounds—ears constantly on the move, alert and active.

Watch a tired, discouraged horse and see how the ears droop and flap dejectedly. This will be especially observed in horses that travel the same route repeatedly. There is nothing in it that interests him—it is monotonous drudgery, and the horse shows it.

A great many accidents could be avoided if people would only learn the "ear language" of their horses. A soothing word when the horse is surprised or startled reassures him and he travels along contentedly, sure that you know best. A good driver must always be watchful and keep an even, gentle voice. A horse catches the spirit of its driver, and fear in the driver will cause fear in the horse.

*Published by N. Y. State Humane Educational Committee, Binghamton, N. Y.

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There is no doubt that an animal that is happy will keep in good condition with less food than one that is frightened and unhappy. Kind treatment, regular food and water, will make a horse more valuable. So it pays, in dollars and cents, to be kind to animals.

Let us begin and try and learn what makes a horse happy in the stable.

In the first place, if it is possible, use a "box" stall—that is, a stall with all sides enclosed, so the horse does not have to be tied. With his head left free he can choose his position, and can rest better, especially when lying down.

Even a small stall can be made more comfortable by having a door made high enough at the end of the stall so the horse cannot get his feet over it. Then he can be left without tying. The ordinary single stalls are usually not long enough to allow this, but a few feet of space added can make a horse much more comfortable by arranging in this way.

Then let the stall be well lighted. A horse does not enjoy being in a dark, gloomy place any better than we do. A dark stable is injurious to the eyes, as the sudden change from it into the bright sunshine, especially when snow is dazzlingly bright in the winter, affects the sight. Anything that injures a horse's eyesight decreases his value. See that the stable is kept clean and dry. Nearly all the common diseases of horses may be traced to unsanitary stables. A horse *must have pure air and dry stable.*

A damp, cold barn will give a horse rheumatism, neuralgia and pneumonia—just as it would affect a person. Horses are very much like people in some ways, and any barn that is damp and unsanitary for man has the same danger for the horse. Make a good, deep bed for him to sleep upon so that he will not feel the cold from the floor. "Chips" make a good bedding for summer, but straw is warmer for winter use.

What shall we feed him? That depends upon the horse's work. One that is working every day should have from four to six quarts of oats at each meal, three times a day. One used for a few hours each day does not need as much; say from two to four quarts will be enough. Give hay and fresh grass when it is in season, and for a relish, carrots, apples, potatoes, turnips, or any vegetable that the horse likes.

In the winter, one feed of corn and oats daily is good, as corn makes fat, and that keeps the horse warm. Feed corn on the ear, once in awhile, and then the horse can sharpen his teeth and clean them, at the same time.

A bran mash at night is enjoyed by most horses. About two quarts of bran stirred into enough water to moisten it well. If a cold night, use hot water, and at times a tablespoonful of ginger. Always give water with the food. Some like the water before, and some after eating. Consult the horse's wishes in that.

We have found that no two boys, or girls, or dogs, or cats, are alike in their looks, their tastes, or desires. Let us now add the horse to that list.

No two horses are exactly alike. If a horse refuses to eat something that other horses like, do not try to force him to eat it.

Place salt where a horse can help himself to it. He likes it as a relish, the same way we enjoy jelly or pickles with our food. But it is more than a relish. It is necessary for a horse to have salt. It helps to keep his stomach

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in good condition. Some horses can be trusted with a pail of water, standing in their stalls, which they can drink as they choose. This is especially a good idea in hot weather. Other horses will tip the pail over as soon as they drink all they want, and are naughty enough to walk on the pail.

I am acquainted with one horse that for eight years always has had a pail of water standing in his stall. It is very seldom overturned, and I do not think this horse has ever spoiled a pail. I know another horse that would turn over the pail and put his foot in it every time it was left in the stall. Study your horse. See if he is nervous, or timid, or quick-tempered, or sulky. Talk to him, and he will soon understand many words and be sensitive to your praise or blame.

Horses learn readily, and there are many little ways we can use in teaching them. To teach one to stand and wait for you (without tying) is very simple. All it requires is sugar and regularity. Each time you tie the horse and leave it, *upon your return* give him a lump of sugar. He will soon connect the idea of the sugar with your coming, and he will not leave the spot until he gets it. Soon you need not tie him, for he will wait patiently when you leave him, for you and the sugar. After a while an occasional lump will suffice. In harnessing, if a horse objects to taking the bit in his mouth, dampen the bit and put sugar on it. As he takes it in his mouth he tastes the sugar, and likes it, and soon he will reach for the bit when he sees it. *Never put a cold bit in a horse's mouth.* It makes the teeth ache, and if very cold will take the skin off from the tongue. An unpleasant experience with a cold bit will make a horse object to taking the bit for a long time. And can you blame him? He is afraid of it. If you burn your tongue with hot molasses candy you do not want hot candy again! Give the horse credit for the same good sense.

Just think about your horse, and reason out things. The man who taught "Beautiful Jim Key" all his lessons, lived with him and watched and studied his peculiarities, and that is the reason he is so successful with him. If your horse is in the pasture you will find by feeding him something he likes from some one dish each time you catch him, that he soon will come to meet you as soon as he sees the dish; and it is much easier to call a horse to you than to chase him around a pasture. Be sure to treat him kindly when you catch him and soon he will have no fear of you.

I once visited a farm where the man called his horses and cows to him by putting salt into a little tin pail and standing in the pasture and calling to them; then he would feed the salt to them. So whenever they saw the tin pail in his hand they hurried to meet him in order to get the salt. I did not know all this, and one day I went down into the pasture to pick the berries that grew along the fence; carrying with me a little tin pail. What was my surprise to see cows and horses all start in my direction. I looked around to see what caused their sudden interest my way, and could see nothing; so I walked along and soon a procession of eleven cows and four horses was following me. I became a little nervous at so much attention, but as they all seemed friendly I soon got over my fears. Finally a beautiful colt came close to me and poked his nose into my pail of berries, and while I was

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wonderingly watching him the mob pressed closer until I was surrounded. Hastily I emptied my pail of berries on the ground, and while they were examining them I made my escape over the fence. When I told the family about it they laughed and said: "They did not want your berries; they thought you had salt!"

If you are going to turn your horse into the pasture during fly-time, put on him a blanket or fly net, for the biting flies annoy horses greatly, and sometimes they will grow thin just from stamping and biting at the tormenting flies. If you have no blanket, rip open a coarse burlap bag and use that—the horse is not particular as to style; what he longs for is comfort.

When we are ready to harness our horse, let us see that the harness fits him. An ill-fitting harness hurts a horse just as an ill-fitting shoe hurts you. If the collar is so tight it chokes, or so loose it hangs down on the shoulder bones and rubs, it cannot help but hurt him. In adjusting the check rein, fit it to the natural position of the horse's head. A side check is preferable for most horses, but an overdraw check, that is loose enough, is comfortable. The great trouble is, that many people try to fit their horse to the check, instead of fitting the check to the horse. A check that is too short is the cause of agony to the horse. If you doubt it, try tying your head or any part of your body into an uncomfortable position, and keeping it so for a few hours. That experiment will settle all doubt.

Use as easy a bit as is possible. Sometimes a nervous horse is ruined by an irritating bit. If the horse "pulls" on the bit, or fights it, try using a large leather bit. That does not hurt him, neither can he catch it beween his teeth and "pull" on it. It will accomplish wonders with nervous horses. I know of one case where a "broken" bit and a "gag" bit had been used with a fractious horse, only to make him ugly, and when the large leather bit was tried he drove finely. The other bits hurt his sensitive mouth and the more they hurt the more he pulled and reared. When he became comfortable with the leather bit he was docile.

See that the blinders do not set close to the eyes; also that they do not flap against the eyes. Most horses are more or less apt to be frightened if driven with blinders. A horse has reasoning powers, and if he can see *the whole* of an object he understands better what it is, and does not become as frightened as when he only sees a part and does not know what it is. It is the thing we do not understand that frightens us, and it is so with a horse. A horse's eyes set out, so they can look backward, and it is their safeguard, and it seems questionable wisdom that frustrates the plan of nature by using blinders. A horse driven without them becomes much more companionable, because he can see what you are doing. When you are getting into the carriage, he can see when you are seated and ready for him to start, and can act more intelligently with you when he can see your movements. If he is frightened, he glances back and sees you are calm, and it serves to quiet his fears. Often a horse in the habit of "shying" will stop it entirely by the removal of blinders—so he can see the object he fears. Very few horses fear anything they understand. If a horse shows fear

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of anything, a stump, a stone, the electric car, no matter what it is, let him stand and look at it until he is *sure it will not hurt him.*

Talk to him soothingly all the time, and then approach a little nearer. *Do not hurry him;* let him take time to thoroughly absorb the idea that the object will not hurt him; that there is nothing unpleasant connected with it, and soon it ceases to be of any interest to him.

Never strike a horse when he is frightened, or when he is examining an object of fear. If you do, the next time he sees it he remembers the pain caused by the blow you gave him, and he connects the pain with the object and is doubly scared. Many drivers tell a horse to "go on" and strike him with the whip at the same time. This is a mistake. A whip should only be used for disobedience. If you tell a horse to "go on," wait and give him a chance to mind you before you punish him. Suppose your teacher should tell you to do something and strike you at the same time, you would think you were pretty badly used.

A horse is *willing* to mind you. All he wants is to *understand* what you wish him to do. Some drivers do not even take the trouble to tell their horses what they want them to do, but jerk on the sensitive mouth and ply the whip. How can a horse, treated in that way, act intelligently? Its driver is not acting intelligently. Remember always, to be a good driver, you must let the horse understand your wishes by speaking plainly and gently. There is time enough to punish when he refuses to obey.

Horses are very much like people in some things. *We* enjoy serving those we love—so does a horse. We are anxious to please those for whom we have an affection, and a horse certainly gives better and more intelligent service to the master he loves.

Horses very soon learn to adapt themselves to their drivers, and some are very cunning. The old family-horse that is used by the different members has become very clever in her way. Her mistress sometimes hitches her to the light two-seated carriage and takes some of the older ladies for a ride. Dolly (the horse) is an interested spectator while the carriage guests are being seated. When the old people are safely in, she starts off at a little jog trot, and one would think her the most sedate of horses. That slow trot is just what the old ladies enjoy, and Dolly seems to know it. If the carriage is filled with young folks it is quite a different Dolly that steps off smartly. Her head is up and she travels gaily along. And when the young man of the family, with Dolly hitched to a single carriage, goes down the street, one would think that she was a colt—for flourishings and mock-shyings! She arches her neck and tosses her head and puts on all the fashionable horse-airs!

When her mistress and a friend drive out into the country, cunning Dolly takes advantage of their interest in the conversation and drops into a walk, of which neither lady is conscious, so busily are they talking. So Dolly walks placidly along, nipping at the tall grass and sweet clover, and they all enjoy themselves. Who shall say that Dolly does not understand that family?

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The Correlation of Spelling and Dictation With the Other Work in English—3A*

By Marie L. Bayer.

MODEL TO BE STUDIED.

I. The Baby Prince.

For ten years a happy king and queen wished for a son. At last a beautiful, healthy baby was born to them. Then they were the proudest, happiest parents in the world.

New words:

Queen, beautiful, healthy, baby, born, proudest, happiest, parents, world.

Compare *queen, green, seen; born, corn, torn, worn, morning; proudest, proud; happiest, happy; world, word, work.*

In teaching *beautiful, healthy, proudest, happiest, parents* divide the words into syllables. Drill on the difficult part, *e. g.*, the *a* in *healthy*. "What is the third letter?" "What letter follows the *e*?" "What comes before the *l*?" "What is the difference between *healthy* and *wealthy*?"

PARAGRAPH FOR DICTATION.

A beautiful baby was born to a king and queen. For ten years they had wished for a son. Their healthy baby made them the proudest, happiest parents in the world.

MODEL TO BE STUDIED.

II. The Accident.

One day a careless nurse dropped the baby prince on a marble step. If she had called in a doctor the little prince might have been cured. The wicked woman's silence caused the prince to become a cripple.

New words:

Careless, nurse, marble, step, doctor, might, cured, been, wicked, woman's, caused, become, cripple.

Compare *careless, care, cared; nurse, purse; step, stop; might, night, right, bright; cured, cure; cure, pure, sure; wicked, wick, sick, pick, lick; woman's, woman; caused, paused; become, became; cripple, ripple.*

The difficulty in *doctor* is the second *o*. "How many *o*'s in *doctor*?" "Look at *doc tor.*" "What is the second letter in the first syllable?" "In the second syllable?" "What is the letter before the *r*?" "The next to the last letter?" "What word do the last two letters spell?"

PARAGRAPH FOR DICTATION.

A careless nurse let the poor little baby prince drop on a marble step. The little prince might have been cured if she had called in a doctor. The wicked woman's silence caused the little baby to become a cripple.

MODEL TO BE STUDIED.

III. The Prince and His Wicked Nurse.

The death of both parents left the little lame prince an orphan. His

*Continued from March, 1908, Monographs.

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father's brother had promised to protect the little cripple. Instead of doing so the wicked uncle confined him within a lonely tower.

New words:

Both, father's, death, lame, orphan, brother, protect, instead, uncle, confined, within, lonely, tower.

Compare *father, father's; lame, tame, same, shame,* etc.; *brother, mother, other; shut, cut, jut; lonely lone; lonely, lovely; tower, bower, power.*

Drill on silent *a* in *death, instead.*

Compare *protect* and *prolong.*

FOR DICTATION:

The poor little cripple was an orphan after his father's death. His father's brother had promised to protect him. The wicked uncle instead of doing this confined the prince within a lonely tower.

STANZA TO BE STUDIED.

Our fathers' God, to Thee,
Author of liberty,
To Thee we sing.
Long may our land be bright
With freedom's holy light
Protect us by Thy might,
Great God our King!

New words:

Fathers', God, author, great.

MODEL TO BE STUDIED.

493 Humboldt street,
Brooklyn, November 2, 1908.

Dear Uncle John,

Miss White has begun the story of "The Little Lame Prince." I know it is going to be interesting. Would you like me to tell it to you next Sunday?

Your loving nephew,

_____ _____.

New words:

Interesting, begun.

PARAGRAPH FOR DICTATION.

14 Cook street,
Brooklyn, Feb. 29, 1908.

Dear Uncle John,

Do you know the story of a little lame boy who was a prince? Miss * ——— has begun to read it to us. I think it will be very interesting.

Your loving niece,

_____ _____.

*If the teacher has not taught the pupils how to spell her name, she should, before dictating the letter, write it upon the board so that they may copy it.

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MODEL TO BE STUDIED.

IV. In the Tower.

The poor little cripple could neither run nor walk like other children. He could only drag himself along the floor from place to place. He amused himself with his books and toys and by gazing out of the narrow windows.

New words:

Neither, nor, children, drag, floor, place, amused, books, toys, gazing, narrow, windows.

Compare *neither, either; nor, or; children, child; drag, rag; floor, door; place, lace, race; book, look, took; toy, boy, joy; narrow, arrow.*

PARAGRAPH FOR DICTATION.

The poor little cripple could only drag himself along the floor. He could neither run nor walk like other children. He would amuse himself by gazing out of the narrow windows.

MODEL TO BE STUDIED.

V. The Wish.

One day a remarkable thing happened. The little prince, feeling very lonely, wished for a loving friend. His wish was instantly granted. A smiling little woman clad in gray appeared before him.

New words:

Remarkable, happened, feeling, friend, instantly, granted, smiling, clad, gray, appeared before.

Compare *clad glad, lad; gray, say, ray, day; appeared, ear, dear, clear.*

Drill on the *i* in *friend.*

PARAGRAPH FOR DICTATION.

A remarkable thing hapened one day. The lonely little prince wished he might have a loving friend. Instantly his wish was granted. There appeared before him a smiling little woman clad in gray.

MODEL TO BE STUDIED.

VI. The Little Gray Lady.

The little gray lady petted him as his own loving mother might have done. Then she made him a present of a magic traveling cloak. This wonderful cloak would carry him wherever he desired to go.

New words:

Lady, petted, present, traveling, cloak, wonderful, carry, wherever, desired.

PARAGRAPH FOR DICTATION.

After the little gray lady had petted him she gave him a present. It was a magic traveling cloak. On this wonderful cloak he could go wherever he desired.

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WORDS FOR 3A.

Selected from the Work in English for the Grade.

Emerson.

About
above
America
amused
appeared
April
arrows
ask
August
author
awake

Baby
bark
beast
beautiful
become
been
before
begun
behind
birch
block
books
born
both
boughs
bound
bow
brand
break
breathe
breeze
brother

Called
canoe
careless
carry
caused
cedar
children
clad
cloak
confined
country
cousin
cradle
cripple
cured

Daughter
death
December
desired
died
doctor
drag

Father
father's
fathers'
feathers
February
feeling
fir
firefly
flint
floor
forest
framework
freedom
freedom's
Friday
friend
from
front

Gazing
gloomy
God
grade
grandson
granted
gray
great

Happened
happiest
healthy
heart
heavens
Hiawatha
high
holy
Indians
instantly

January
July
June

Keep

Lady
lame
language
larch
leaking
liberty
linden
lined
lonely
long
loving

Marble
March
May
might
Monday
mortal
moss
mountain
music

Narrow
native
neither
nephew
niece
noble
Nokomis
nor
November
nurse

Oak
ocean
October
orphan
our

Parents
partake
petted
pilgrims'
placed
poem
pride
prolong
protect
proudest

Queen

Rapture
reindeer
remarkable
resin
rills
rocks
rushes

Saturday
seam
secrets
September
shine
shining
shore
silence
sinews
skin
smeared
smiling
song
sound
stars
step
stripped
Sunday
swell
sweet
talked
taught
templed
thee
their
things
thrills
Thursday
thy
tipped
'tis
together
tongues
tough
tower
toys
Tuesday
traveling
trunk

Uncle

Wednesday
whenever
where
wherever
which
wicked
wigwam
windows
winged
within
woman's
wonderful
world
wrapped
write

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MODEL TO BE STUDIED.

48 Varet Street,
Brooklyn, January 24, 1908.

Dear Father,

Miss Black is pleased with my work. I have learned everything she has taught us. When you come home again I may be in the 3B grade.

Your loving daughter,

_____ _____.

New words:
Grade, daughter, write.

REARRANGED FOR DICTATION.

45 Flushing Avenue,
Brooklyn, June 22, 1908.

Dear Father,

Will you be pleased if I am in 3B when you come home again? Miss _____ says I have learned everything she has taught us.

Your loving son,

_____ _____.

MAXIMS AND PROVERBS (Containing words previously studied).

We can do more good by being good than in any other way.—*Rowland Sill.*

To *be* good is the mother of to *do* good.

The secret of being lovely is being unselfish.—*John Gilbert Holland.*

Write it on your heart that every day is the best day of the year.—

Suggestive Questions—3A and 3B

NATURE STUDY.

I.

Buffalo:

Where does the buffalo live?
What does it eat?
Tell what a buffalo looks like.
How can you tell a buffalo from a cow?
How does the buffalo graze?
For what is the skin of the buffalo used?

Tiger and Lion compared with Cat—(same questions for each animal):

How large is the tiger?
What does it look like?
With what is it covered?
Where does it live?
What does it eat?
What is home of tiger and lion called?
Name the animals that the tiger attacks.
What other animal is the tiger like?
In what way are they alike?
How does soft cushions on the tiger's paws help him to get his prey?

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II.

What is the first bird that comes north in the spring?
Give the call of the bluebird.
Whose nests do bluebirds generally use?
Where do flycatchers prefer to build their nests?
What is their nests lined with?
Where does the phoebe go to build its nest year after year?
Why is the robin called robin redbreast?
What is the color of the robin's eggs?
Name the parts of a plant.
Where does the bluebird build its nest?
What kind of nest does it build?

Phoebe:

Where does the phoebe build its nest?
Kind of nest?
What is peculiar about the phoebe's tail?

Seeds:

What is inside the seed?
Where does the baby plant get its food?

Swallow:

Where does it build its nest?
What kind of nest?
What kind of tail has the swallow?

Blackbird:

Tell about the blackbird's nest.
Near what does the blackbird like to live?
Why do the farmers hate them?

Seedlings:

What do we call the two parts of the seed?
Which grows first—root or stem?
Of what use are the cotyledons?
When do the seed leaves drop off?

Frog:

What size is the frog?
What color?
What is noticeable about the hind legs?
Why are they so stout?
Where does the frog lay its eggs?
What comes from the egg?
Give a description of a tadpole.
How does the tadpole change into frog?

III.

What do you know about the tail of a barn-swallow?
Why are these prongs there?
Tell what you know about the song of the blackbird.
Describe the development of a frog from the eggs.

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What food do pollywogs eat?
What are the uses of seed leaves?
Give the life history of the pea.
Of what use are the blossoms of a plant?
Which grows faster—a bean planted in rich soil or one planted in sawdust?
What does a plant need in order that it may grow well?

IV.

Birds:

Hummingbird, king bird, oriole, vireo, scarlet tanager.
Name the smallest bird we have.
How can you always tell a hummingbird?
Describe its nest.
Tell what you know about the disposition of the hummingbird.
What is the difference between the disposition of the hummingbird and that of the king bird?
How does the oriole build its nest to protect it from wind and rain?
Give another reason why he builds his nest so deep.
What is the vireo called and why?
What shape is the vireo's nest?
Tell what the nest of the scarlet tanager looks like.

Flowers:

Violet, bluet, anemone, spring beauty, marshmarigold, chicory, fruit blossoms.
When do fruit blossoms begin to appear?
What is the part of the flower that is brightly colored?
What is pollen? Nectar?
How does the fruit develop from the flowers?
Tell the parts of the violet.
How are insects attracted to flowers?
How are they rewarded?

V.

Why should we not pull wild flowers up by the root?
How many kinds of bees in every hive? What are they?
How many queen bees to every hive?
What is the work of the queen bee? Of the workers?
Describe honeycomb.
What insects were the first to show that paper can be made from wood?
What is the nest of the wasp made of?
Where do ants live?
How large are ants?
Tell all you know about the habits of ants.

Flowers:

Fuchsia, verbena, poppy, lily-of-the-valley, magnolia, spice bush, laurel.
(Repeat questions on flowers under IV.)

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Stories About Animals—The Frog—3A and 3B

The Frog's Eggs.

Albert had gone to visit his uncle who lived in the country. One day in April, when they were taking a walk near a pond, Albert saw on the surface of the water something which was strange to him.

"Uncle George," said he, "what is that jelly-like mass floating on the water? It has black dots in it."

"Those are frogs' eggs," said his uncle. "They are sometimes called frogs' spawn. Let us get some of them in a pail, and take them home."

They took the eggs home, and put them into a tub of water. In two or three days, they noticed that the little eggs became larger and larger, and, instead of remaining round, they became oblong.

About a week later, when Albert looked into the tub, he cried, "Oh, uncle! There are some little fish swimming around. They look all head and tail!"

"Some of the eggs have hatched, and those are little tadpoles. Now you must go to the pond and get some pond weed for them to eat."

"Yes; I will go; but will the tadpoles ever be frogs?" asked Albert.

"Watch them and see what you think about it," said his uncle.

Albert did as his uncle told him, and this is what he saw:

Soon some gills which the tadpoles used in breathing grew outside the head.

When the tadpoles had grown a little more, the hind legs began to develop. The gills grew smaller. Then the front legs appeared and the tails became shorter. The gills were covered by a thin skin and changed into lungs.

Then, much to Albert's delight, three little fellows hopped out of the tub—little frogs with tails. But these tails grew smaller and smaller and at last disappeared.

Albert knew that the frogs would be happier near a pond, so he took them to one near by, where many of their relations were croaking.

Frogs and Toads.

Albert stayed to watch the frogs. Soon, he saw their cousin, the toad, come hopping along. What a merry family they were!

The bullfrog would give a deep, gruff "Kerchog! kerchog!" and the smaller frogs would answer in pleasanter tones.

Just then, his uncle came to the pond and said, "Let me tell you something about the frogs and toads:

"Frogs spend most of their time on land now. Frogs and toads breathe by taking air into their mouths and swallowing it. That is what they are doing when you see their throats swelling out.

"They have another way of breathing. There are little pores in their skin through which they breathe. This is one reason why they like moist, shady places when the sun is shining. The hot sun dries up the pores.

"The frog's skin is smooth, but the toad is covered with warts. People used to believe that handling toads would give one warts, but that is not true.

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"The frog's foot has four toes, or fingers, in front, and five toes behind. The hind legs are very long, and are used for leaping and swimming.

"The hind toes are united by a web, which helps the frog in swimming.

"The tongue of the frog or toad is very curious. It is fastened at the front of the jaw. It is long, and he can roll it out very quickly. You cannot see him do it. The tongue is covered with a sticky substance, which helps to hold the insects that he catches.

"Toads are useful in gardens, for they eat many insects which would do great harm by destroying the flowers and vegetables.

"Gardeners feel very friendly toward the toad, and are always glad to see him in their gardens. Although toads eat so many insects, they can go a long time without eating. Toads can easily be tamed, and people often make pets of them.

"The mother toads go to the ponds to lay their eggs, and the toads' eggs are hatched in the same way as the frogs' eggs.

"During the winter, some frogs and toads bury themselves in the mud in the bottom of ponds."

Hygiene—3B.

First Month.

1. When we are sitting properly, how should our feet be placed?
2. When we are standing properly?
3. How should our heads be held in standing?
4. What happens when we let our heads hang forward?
5. Why is this harmful?
6. How should our backs be when we are sitting properly?
7. What should round-shouldered people do to get better?
8. When we stand on one foot, what happens to the spine? Is this healthful?
9. When a person sleeps with several large pillows under his head, what happens to the spine?
10. Why is sleeping without pillows considered healthful?
11. Why must we not sit on our spine?
12. Why should we hold our chests high?
13. In sitting why must we be careful that our seat is neither too high nor too low?
14. Why should we have a bed long enough for us to stretch out to our full length?
15. On what part of the foot should we walk when climbing stairs?

Second Month.

1. Why do we form the habit of going to bed early and of getting up early?
2. Why do we form the habit of doing our work well every day?
3. What would happen if little children sat all day in school from nine until six o'clock? Why do we need play?
4. Why should we play after school hours?
5. When we run, how do we feel afterwards?

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6. When we jump, what part of our body feels tired?

7. Which is healthier, playing indoors or playing outside? Why?

8. Can one work too much? Can one play too much?

9. How do you feel when you have played too much? Does this play do you much good?

10. When should you stop playing?

11. When you have eaten a hearty meal, where does much of the blood go? Why?

12. Is it good to play or exercise hard soon after eating? Why not?

13. What should one do after eating?

14. Would jumping rope be good just after eating? Why not?

Third Month.

1. Is it good to eat between meals? Why not?

2. Does the stomach need time to rest? How should we let it rest?

3. Should we have our meals at regular times? What will happen if we do not?

4. Should people have a certain time for going to bed? What happens if they do not?

5. If you want to get up especially early some morning, when should you go to bed the night before?

6. How should you stand in climbing stairs—leaning far forward, or standing nearly straight?

7. In which position can you breathe better?

8. Why is running races good for children?

9. In what way is "hide and seek" good?

10. In what way is "hunt the thimble" good for children? "Blind man's buff"?

11. Why do our brains become tired? Why are we better able to work after recess than a little while before?

12. If we run for too long a while what happens to our heart? If we jump for too long a time?

13. Why should we not tire out our hearts?

14. What does exercise do for our bodies. For our muscles?

Fourth Month.

1. Should we study at recess? Why not?

2. What are we trying to do to our brains at recess time? To our muscles?

3. Why is bathing necessary? What things do we need for a good, warm bath?

4. Why is bathing good, besides making us clean?

5. How should we breathe—through the nose or through the mouth? Why?

6. How should we take care of our teeth? What happens to them soon if we do not keep them clean? What makes them decay? How do they feel then?

7. When we are working, and our eyes begin to feel tired, what should we do? How can we rest them?

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8. What happens to our eyes when we read with the bright sunlight on the page? When we read in a dim light? When the print is too fine?

9. How should we take care of our hair? What should we do to it besides brushing and combing it? What should we do to our brushes and combs after using them a few times?

10. How should we take care of our hands? Of our nails? What happens if we go out in the cold with wet hands? How can we keep them from chapping?

Fifth Month.

1. What kind of clothes should we put on after a bath?

2. Why should we not wear the same clothing at night that we wear during the day? When you take off your clothing, if you can't have it washed what should you do with it?

3. Why is rubbing good in bathing? Should we stay very long in the bath? Why not?

4. What happens to the pores of the skin when it is not washed? How does the skin look then? How does it feel?

5. What makes your hands and face sticky, shiny and hot sometimes when they are not really dirty? What should you do then?

6. How can we keep the pores open and the skin healthy?

7. How do very heavy clothes feel? Tight ones? What kind of clothing should we wear to play in? Why?

8. What does a tight collar do to one's breathing? Why does it make our head ache sometimes?

9. Why should our belts not be tight?

10. What should we do about clothing that has been dampened in the rain or snow?

11. How often should we bathe? What kind of baths should we take?

12. Of what use are cold water baths? How often should they be taken?

13. When is the best time to bathe? Why should we not bathe just after eating?

14. Why should we not take a cold bath just after running hard?

The Correlation of Spelling and Dictation With the Other Work in English—3B*

By Marie L. Bayer.

MODEL TO BE STUDIED.

I. Pandora.

Pandora was a little maiden whom the gods loved, because she was so cheerful. It was believed that her presence would bring sunshine to the gloomy palace of Epimetheus. Therefore she was sent by Jupiter to the lonely Epimetheus to be his friend and companion.

New words: Pandora, maiden, cheerful, believed, presence, bring, sunshine, gloomy, Epimetheus,† friend companion.

*Continued from March, 1908, Monographs.

†The spelling of this and other difficult proper names need not be taught. They may be written upon the blackboard and copied by the pupils.

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In *Pandora*, the children should observe the hidden words: *pan, an, and, or.*

Drill on the *i* in maiden.

Like *receive, believe* should be associated with the word *Alice.* It will be noted that *i* (in the combination *is*) follows *c,* as in the word *Alice.*

In teaching *friend* vary the questions e. g.: "What letter follows *i*?" "Name the last three letters." "What word do they spell?" "After what three letters in *friend* does the word *end* occur?" "What word follows f—r—i?" etc.

Prearranged for Dictation Pandora.

Pandora was a cheerful little maiden whom the gods loved. They sent her to Epimetheus to be his friend and companion. Jupiter believed that Pandora's presence in the gloomy palace would be like sunshine.

Model to Be Studied.

PANDORA AND THE WONDERFUL BOX.

Pandora often found pleasure in tracing with her slender fingers the delicate scrolls and queer designs on the outside of the box. Pandora knew she must never try to open the box, because Epimetheus had forbidden her. Still her curiosity tempted her to disobey.

New words: often, tracing, slender, fingers, delicate, scrolls, queer, designs, outside, must, forbidden, curiosity, tempted, disobey.

Drill on the correct pronunciation of *often.*

Compare *tracing, lacing, facing, slender, fender, tender, scrolls, rolls, tolls, queer, cheer, deer.*

Compare *queer, queen, quotient.*

Note that *q* is invariably followed by *u.*

Be sure to teach the correct syllabification of these new words.

Drill on the two d's in *forbidden.*

Show the three hidden words: for, bid, den.

Call attention to the fact that the *n* in *finger* has the sound of *ng,* and the *g* has the hard sound as in *hun-ger.* It is pronounced *fing-ger,* rhyming with *lin-ger* NOT *sing-er.*

Paragraph Rearranged for Dictation.

Pandora often found herself tracing the queer designs and delicate scrolls with her slender fingers. Her curiosity to see what was inside tempted her to disobey Epimetheus. She knew that he had forbidden her to open the box.

MODEL TO BE STUDIED.

III. The Temptation.

Early one morning after Epimetheus had gone to the fields, Pandora found a key of curious shape. Instantly she was tempted to see whether the key really did belong to the wonderful box. She felt certain she could keep her promise not to open it.

New words: early, gone, fields, key, curious, shape, whether, really, belong, certain.

Compare *early* and *earnest,* noting the common element *ear.*

Contrast the pronunciation of *whether* and *weather.* Compare *whether, while, when,* etc.

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Insist on *really* being pronounced in three syllables: *re-al-ly.*

Unless great attention is given to the *o-u-s* in *curious,* the pupils will leave out either the *o* or the *u.*

PARAGRAPH REARRANGED FOR DICTATION.

The Temptation.

Early one morning Pandora was tempted to break her promise. She had found a key of curious shape. She wanted to know for certain whether or not the key really belonged to the box.

MODEL TO BE STUDIED.

II. Pandora's Disobedience.

When the key with a little click slid into the lock it was a dangerous moment for Pandora. Her hands trembled on the edge of the lid and her breath came quickly. She started to run away because she thought she heard footsteps. Before she knew it, however, she had raised the lid to peep in.

New words: slid, lock, dangerous, moment, trembled, edge, breath, quickly, started, footsteps, however, raised, peep.

Compare *dangerous, curious; slid, lid,* etc.; *lock, flock, block, clock; edge, ledge, hedge; started, parted; footsteps, footsore; however, forever, whenever; peep, sleep, sweep; breath, death; raised, praised, trembled, tremble.*

PARAGRAPH REARRANGED FOR DICTATION.

IV. Pandora's Disobedience.

It was a dangerous moment for Pandora, because she knew that she should not disobey. Her hands trembled and her breath came quickly. Then she thought she heard footsteps. She started to run away. Instead of doing so she raised the lid and peeped in.

MODEL TO BE STUDIED.

V. Pandora's Sorrow.

When Pandora saw the mischief her curiosity had caused she leaned her pretty head against the box and sobbed bitterly. Between sobs she listened for the footsteps of Epimetheus. Never before had she dreaded his return.

New words: mischief, caused, leaned, against, sobbed, bitterly, listened, dreaded, return.

In teaching *mischief,* it seems *unwise* to call attention to the word *chief,* because the pronunciation may suffer. Have the children name the letters *a-b-c-d-e-f.* What letter comes before *f* in the alphabet? Before the *f* in *mischief?* Name the last two letters in *mischief.*

What letters follow *c-h-i?*

Compare *caused* and *because;* caused, paused; *lean, mean, bean; lean, leaned; again, against; sob, sobbed; robbed, robbed; bitter, litter, glitter; bitter, bitterly; listen, often* (silent *t*); *listen, glisten; listen, listened; dread, bread, tread, thread; dread, dreaded; return, turn, burn.*

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WORDS FOR 3B.

Against
aged
Alfred
almost
anemone
approached
aquarium
asking

Baucis
became
belfry
believed
belong
beneath
beside
better
bitterly
blackboard
blessing
borrowed
breath
bring
brought

Calendar
carpenters
case
caused
Central Park
certain
charm
cheer
cheerful
choose
classroom
click
clothes
collection
coming
companion
contains
cottage
curiosity
curious

Dangerous
dart
date
dazzles
dearer
decided
delicate
delighted
designs
determined
dew
difference
disobedience
disobey
distance
dividend
division
divisor
dreaded
drear
drew
dumb
dusty

Early
earnest
edge
eight
elsewhere
Epimetheus
example
exile

Fields
fifteen
fingers
finished
flower
footsore
footstep
forbidden
forever
forty-four
fourteen
fragrance
friend

Gaily
gaze
gloomy
gods
goes
goldfish
gone
grown

Hallow
happily
happiness
hath
hearty
Howard
however
humble
humming-bird

John
Jupiter

Key
kindness

Latch
leaned
length
light
listened
lock
lost
lowly

Maiden
making
manner
masons
mercury
merry
milkmaids
mind
minnows
minuend
mischief
moment
moon
mortal
multiplicand
multiplication
multiplier
museum
must

Ne'er
nest
new-mown
night
number

Often
ordinary
oriole
outside
owl

Palaces
Pandora
parted
path
patient
peace
peep
people
permitted
Philemon
picture
pleasures
polite
politely
prefer
presence
principal
product

Queer
quickly
quotient

Raised
rarely
really
received
remain
remainder
return
rewarded
roan
robin
round
roundelay

Sail
school
scrolls
seek
seventeen
shape
shelter
sincerely
singing
sitting
skies
slender
slid
smells
snap
sobbed
splendor
standing
started
steep
stories
story
strangers
stream
studying
stuffed
sturdy
subtraction
subtrahend
such
sunny
sunshine
surface
swallow

Tailors
temple
tempted
Tennyson
thatched
there's
thirty-six
though
thrice
through
to-day
to-day's
torn
traveled
travelers
tracing
tread
treat
treated
trembled
truly
twelve
twenty-seven
twice

Valley
valleys
village
violet

Warning
watch
weary
weavers
welcome
whether
whirring
white
whom
wild
William
wishes
wits
woodbine
wrote

Yesterday

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PARAGRAPH REARRANGED FOR DICTATION.

Pandora leaned her pretty head against the box. She sobbed bitterly as she listened for the footsteps of Epimetheus. She did not want him to know the mischief her curiosity has caused. Never had she dreaded his return before.

V. Model to Be Studied.

Pandora determined to do everything she could to bring back the blessings lost through her disobedience. She became very patient and earnest in all that she did. At last when she had grown to be a beautiful old woman all the blessings were hers once more.

New words: determined, blessings, lost, disobedience, patient, earnest, grown.

Pay particular attention to syllabification. In teaching the spelling write the words not only as a whole but also divided into syllables.

What sound has *i* in *determined?* What little word can be heard in the third syllables? (*in*).

Name the letters occurring after the *i-n.* What letter after *in* is silent? Have the children notice the *e* before and after *t.*

Compare *earn* and *learn; earnest, nest, earn, earnest, earnestly.* Drill on the silent *a.*

Compare *grow* and *grown.*

PARAGRAPH REARRANGED FOR DICTATION.

Through Pandora's disobedience the blessings had been lost. Therefore she determined to do everything she could to bring them back. Finally she became so patient and earnest that the blessings were hers once again.

Nature Study—4A

SPIDERS.

A. *Web.* Most spiders spin webs, usually called cobwebs, but while some live in them, others use them only as a means to catch their prey. They seldom move from place to place without spinning a line after them; by the use of which they are able to drop safely from any height. Spiders also line the crevices in which they pass the winter with a coating of silk, and they shut up their eggs in a cocoon made of silk. Read on manner of spinning webs: Young Folks' Cyclopædia of Common Things, pp. 705 and 706.

B. *Comparison with insects.* Spiders are like insects in being air-breathing, but are unlike them in having the head and chest united in one, so that the body instead of being divided into three (3) parts, as in insects, is divided into two (2)—the head and chest and the abdomen.

C. They also have eight (8) pairs of legs, while insects have but six, and they have no wings and no feelers. Spiders, too, do not pass through two or three changes in life, like many insects, but are born in the same shape in which they grow up.

D. *Habitat.* There are a great many kinds of spiders. Differ in size.

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Some are found in all parts of the world and some only in a few places. Some live in the fields and some on the water. Some live all the time in houses, either in cellars, corners of rooms or chinks in the walls, and others seldom enter houses unless driven in by cold weather

E. *Means of defense.* Spiders are armed with terrible jaws, made up of two sharp-pointed hooked blades, with saw-like edges. The points of these blades shut together in the wound when a spider bites, and at the same time there is spurted from them a colorless poison, which kills insects.

F. *Prey.* Spiders are flesh eaters, and their mouths are made for bitng, though they generally suck the juices from the bodies of their prey instead of eating them.

G. *Eggs.* Spiders lay eggs but once a year, usually in June. Almost all kinds enclose them in a cocoon, in which the young remain until they are old enough to take care of themselves. As many as two thousand are sometimes laid in one cocoon, and though many, many of them hatch, few live to grow.

Snails.

A. *Habitat.* There are many hundreds of kinds, some of which are found in all parts of the world. They usually live in damp places, such as the shady walks of parks and gardens. In cold weather they crawl under a stone or log, draw the body into its shell and spend the winter in a numb state.

B. *Manner of feeding.* At the end of the head is the mouth, with a horny-toothed jaw on the upper lip, against which the animal presses its food with its tongue. (Food.) It can thus eat tender leaves, fruit, mushrooms and other soft things. They feed mostly in the night time, and will often spoil a garden in a single night.

C. *Characteristics.* The snail has a head with two pairs of feelers on it. The upper pair, which are larger than the lower pair, can be entirely drawn into a sheath; the round knobs on the end of these are the eyes of the snail. At the end of the head is the mouth. The common garden snail has a soft, jelly-like body and a hard spiral shell (spiral usually turns from right to left, left to right a curiosity). The lower part of the body, which is long and flat, is called the foot.

D. *Locomotion.* By drawing up the foot and pushing it out again, the animal can creep, but not very fast. When at rest the whole body can be drawn into the shell.

Oysters.

A. *Habitat.* Oysters are found in almost all parts of the world, but they are not all alike, for there are said to be more than fifty kinds. Those growing in cool climates have more flavor than those of hot countries. They grow commonly near shores in water twelve to fifty feet deep, generally in quiet bays or at the mouths of rivers. They cannot live in fresh water, but sometimes they live out of water. Chesapeake Bay, Long Island Sound.

B. *Characteristic parts.* The two sides of the oyster's shell are unequal. The lower side is larger than the upper and bulges out more, and it is by this that it is fastened to rocks, limbs of trees, and other things at

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the bottom of the sea. The oyster is a very simple animal, but it breathes and eats like other animals. It has two pairs of gills, by which it separates from the water the small quantity of air which it needs; and although it has no head, it has a mouth hidden under the fold of its mantle or skin, into which it sucks food from the water. Every oyster has a strong muscle fastened to the middle of each side of its shell by means of which it is able to open and close its shell. This muscle has to be cut through with a knife before any oyster can be opened.

EARTHWORMS.

A. *Earthworms* (form). Worms in general. The body of worms are generally long, slender and round, though some are flat, and they have no skeletons. Worms have no feet, but are usually provided with bristles, hairs or hooks, which aid them in crawling; and most of them have mouths and eyes and have also senses of hearing and touch.

B. *Form of earthworms.* Earthworm, sometimes called angleworm, has a sharp-pointed head, near the end of which is its mouth. It has no teeth and no eyes; along the rings of its body are many short, rough bristles which aid in creeping or climbing in the ground.

C. *Habitat.* Earthworms live in moist earth, through which they work their way, making long galleries and swallowing the earth as they go.

D. *Food.* Some writers think that they get all their food from the vegetable matter in the earth. Earth passes through them just as food does through other animals.

Uses. The little heaps of fine-grained earth often seen on the surface of the ground are earth thrown out by them. These worm casts, as they are called, sometimes gain so fast as to form a layer of fine soil, and many old pastures owe their richness to them. By throwing up these little heaps and by boring through and loosening the soil so that the rain can get at it and the fibres of the plants can work their way through it, earthworms are of very great use to mankind. They also furnish food for many birds and fishes and for small mammals and reptiles, such as moles and frogs.

E. *Enemies.* Birds, fishes, moles, frogs.

F. *General.* Earthworms seldom come to the surface of the ground except at night and in wet weather. In times of drought and cold weather they go deep down into the earth.

Suggestive Questions—4A

NATURE STUDY.

In what way is the spider like the insect?
How does it differ from a true insect?
What does the spider eat?
How does the spider catch its prey?
How does the spider make its web?
What means of defense and protection has the spider?
Where does the spider live in winter?
Where are snails usually found?
What and how do they eat?

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What trail does a snail leave?
Describe a snail.
What are its enemies? How does it defend and protect itself?
What is the difference between snails and slugs?
Where are the oyster and clam usually found?
What is their food and how do they get it?
How are oysters protected?
Compare the oyster and the clam. Write two paragraphs.
Of what use is the earthworm?
Of what is its body made up?
How does it move?
What does it eat?
Tell how coal is formed in the earth.
What two kinds of coal do you know?
Tell the difference between them.
Name five minerals and tell something about one of them.
Which is the hardest mineral?
Name one mineral that will scratch glass.
Name one use for each of the following: Marble, mica, sandstone, coal, zinc, aluminum.
Of what is granite composed? For what is it used? Why?
For what is mica used? Why?
Name three materials used for building roads.
Name three materials used for building houses.
Describe how mortar is made.
From where do we get large quantities of slate?
Of what is slate formed?
For what is it used?
What is the most valuable metal?
Where is it found? For what is it used?
What is the lightest weight metal?
How can copper be distinguished from any other metal? Name two uses.

Suggested Questions—4A

ARITHMETIC.

(TIME 1 HOUR 40 MINUTES).

Multiply 349 by 675.
Divide 36984 by 237.
Divide 19200 by 75.
$327.42 is ½ of all my money. How much money have I?
If 42 wagons cost $26964, how much will 27 wagons cost?
If one plot of ground is worth $584, what are 43⅞ plots worth?
If 7 tons of coal cost $45.50, what will 2½ tons cost?
If 125 coats cost $1,125, how many coats can be bought for $72.00?
Divide 3565 by 120.
Add the following: 53265, 96083, 20936, 65, 8340, 86907, 563, 5241.
(Time for addition, 1¾ minutes.)

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Add: $863\frac{3}{4}$, $867\frac{1}{2}$, $999\frac{1}{4}$, $66\frac{3}{8}$, $164\frac{3}{4}$

$10396 \div 89 = ?$

$5041 \times 57\frac{3}{4}$

What will $24\frac{2}{3}$ yds. of lace cost at $1.50 a yard?

A man has 46 pigs. He keeps 25 and sells the remainder at $9 each. How much does he receive?

Write from dictation and add: $15, $3,000.25, $946, $25,081, $9,402.24.

Find the sum of 9846, 3795, 4639, 5284, 7948, 6593.

From $9034\frac{1}{3}$ take $978\frac{1}{6}$.

Divide 10097 by 12.

Divide 14975 by 75.

Multiply 865 by $18\frac{3}{5}$.

A field is 79 ft. in length and 68 ft. in width. What is its area?

Bought $8\frac{1}{2}$ yds. at $1.16 a yd. What was the cost?

There were 126 eggs in a box. If 6/7 of them were sold, how many were left?

A can contains 12 gals. How many bottles holding 2 qts. each can be filled from it?

LANGUAGE.

Write two sentences that state what boys do.

Write two sentences that state what is done to the horse.

Fill these spaces with words that express quality:

The shell is ——.

I have a —— hat.

Where is the —— girl?

My —— knife is lost.

Name four places where a capital letter should always be used.

Draw two lines under the subject and one under the predicate in the sentences given below:

John's hat is on the table.

The man has gone.

Harry goes to school.

Write one stanza of any poem learned this term.

GEOGRAPHY.

Name the boroughs of New York.

Which borough contains greatest number of people?

What river must you cross in going from Brooklyn to Manhattan?

Name two ways in which you can cross this river.

What large park in Manhattan Borough?

What large park in Brooklyn Borough?

In what two ways can you go down town by way of Myrtle avenue?

On what bay is New York situated?

Name two *large* islands wholly included in Greater New York.

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On what island is Brooklyn Borough?
How are the streets of New York cleaned?
Name four kinds of meat found at your butcher's.
Name a store in this vicinity where you would go to buy clothing.
Name four kinds of work that people in Brooklyn are engaged in.
Where is our nearest police station?
Name the oceans on the earth's surface.
Name the continents on the earth's surface.
What mountain system in western part of North America?
What street is west of our school block?
What are the effects of the daily motion of our earth?

The Teaching of Civics—4A

By FLORENTINE M. FULD.

CHAPTER III.—STREET CLEANING DEPARTMENT.

I.—First Week.

(I) History:
1. At first each householder was required to clean the street in front of his house.
2. Subsequently the Health Department and the Police Department attended to street cleaning.
3. The present Street Cleaning Department was established about 1881.

(II) Street Cleaning:
1. Most streets are swept with a hand broom, because the cracks can be most thoroughly cleaned in this way.
   (a) The sweepings are put into a can attached to the sweeper's cart, which is placed at the curb, and subsequently dumped into a wagon.
2. Asphalt streets are scraped.
3. Roadways are cleaned by sweeping machines.
4. In summer the streets in the crowded sections of the city are flushed:
   (a) This purifies the air.
5. In winter the snow and ice are removed:
   (a) By the Street Cleaning Department if the fall of snow is light.
   (b) By private contractors if the fall is heavy.

(III) Ethics:
1. Each street cleaner is responsible for the condition of a certain number of streets. If they are not kept clean he is punished. The principle of individual responsibility.

II.—Second Week.

(I) Collection of Waste:
1. Waste is divided into three classes:
   (a) Ashes and sweepings.
   (b) Garbage.
   (c) Refuse.
      (a1) Refuse includes all waste except ashes, sweepings and garbage.

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(II) Disposal of Waste:

1. Ashes and sweepings:
   (a) The ashes and sweepings of the Boroughs of Manhattan and the Bronx are used to reclaim lands under water at Riker's Island, in the East River.
   (b) The ashes and sweepings in the Borough of Brooklyn are used to reclaim marshes near Coney Island.
2. Garbage:
   (a) Taken to Barren Island and cooked for twelve hours.
      (a1) Soap and perfumery are made from the oil which is pressed out.
      (b1) The tankage is dried and sold as a fertilizer.
3. Rubbish:
   (a) Paper and rags are sold to paper manufacturers.
   (b) Tin cans are sold to solder factories.
   (c) Bottles are sold to bottle dealers.
      (a1) Each of these articles and many others are separated from the rubbish while it is passing over a slowly moving belt.
   (d) The residue is burned.
      (a1) The heat thus generated is used for electric light and power.

(III) Ethics:

1. The city utilizes all its waste. The principle of waste not, want not.

III.—Third Week.

(I) Civic co-operation:

1. Receptacles for garbage should be kept covered because of the bad odor emanating therefrom.
2. Papers should not be thrown into the street, because they make the street look untidy and may frighten horses.
3. Fruit skins should not be thrown into the streets, because they make the streets dirty and may cause pedestrians to fall.
4. Sidewalks should not be obstructed, because such obstruction interferes with traffic and the convenience of others.
5. The thoroughfares should not be obstructed, because the resulting interference with traffic may impede the firemen in responding to alarms.
6. Nothing should be thrown from windows, because passers-by may be injured thereby and because it litters the streets.
7. Walks, fences and buildings should not be defaced, because such defacement injures their appearance.

IV.—Fourth Week.

(I) Street Cleaning Leagues.

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Suggestive Questions—4 B

NATURE STUDY.

Name the parts of a plant.

Give the use of each part.

Of what use are plants?

What are the needs of plants?

Name a plant whose roots are used for food.

Name a plant whose leaves are used for food.

Name a plant whose stems are used for food.

Name a plant used for medicine.

Name a plant used for clothing.

Of what use is the seed leaf to the plant?

Name a plant that has one seed leaf.

Name a plant that has two seed leaves.

Tell three different ways that plants take root and grow.

Name three flowerless plants. Which is most numerous?

Which one of the flowerless plants is largely grown for the market? Why?

Which one is poisonous?

Draw the mushroom and name the parts.

Describe the gills, The stems. What are poisonous mushrooms called? Give three uses for mushrooms.

What are spores?

Where do we see spores on a fern leaf?

On a mushroom?

What color are the spores on ferns and mosses?

Of what use are they?

Draw a fern leaf showing spores.

Where do ferns grow? Name the parts of a fern.

What are lichens?

To what class of plants do mosses belong?

State three uses of mosses.

To what family does seaweed belong? What is its color? Where does it grow? Where do we find it? Give length of some found in Pacific Ocean. How are seaweeds kept floating? Give two uses for seaweeds.

What is the use of a bulb to a plant? Name two bulbs.

What is a tree? Name three uses for trees.

In spring what happens to the sap? What changes take place in the outside appearance of the tree?

What is a deciduous tree? Name four trees that are deciduous.

What is an evergreen tree? Name four members of this family.

Draw a parallel-veined leaf.

Draw a netted-veined leaf.

What is the difference between a tree and an herb?

LANGUAGE.

First Month.

Write a sentence telling what things are.

Write a sentence telling what things do.

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Write a sentence telling of what quality things are.

Write a sentence telling what is done to things.

Write a sentence using *begin* in past tense.

Complete the following sentences, using some part of the words given in the parentheses:

The shepherd boy —— on a rock (sit). After a while he —— and —— to the brook (rise, go). When he had —— some water he found that his crook was —— (drink, break).

Write sentences using *sing* with *has, have* and *had.*

Dictate:

"The ship," said Mr. Lowell, "struck on the beach with great force."

"There were not men enough in the village," said Dr. Smith, "to unload the cargo."

Dictate five sentences each containing a "possessive" noun.

Children, also, to pick five similar sentences from History, etc.

Tell four cases in which to use capitals. Give examples.

The little black cat has caught a big, gray rat. Give complete subject, complete predicate.

Write the singular and plural of foxes, lady, days, and deer.

Write the short form for you are, does not, will not, I am, shall not.

Write in full, he's. can't, I'll, we've, don't.

Write eight consecutive lines of "The Barefoot Boy."

Write one verse of "September" or "The Fountain."

Second Month.

Mark subjects and predicates: Three pretty little blue flowers were in the vase. Under the tree, sat two children. In a few minutes, she will be here.

Use "bring" in a sentence, past time.

Use "teach" in a sentence, past time.

Use "grow" in a sentence in form with "has," "have" or "had."

Use "fly" in a sentence in form with "has," "have" or "had."

Tell when we always use a period.

Complete the following sentences, using some part of the word given in parentheses:

The sun has ——. (rise)

The men are —— on Saturday. (pay)

He has —— to study "The Barefoot Boy." (begin)

The little girl —— yesterday. (write)

The men —— the boy watch for the wolf. (bid)

Dictate:

"This dose of medicine," said Arthur, "has a sour taste."

"I meant," replied his mother, "to give you an apricot after you took it."

Dictate:

Men's and boys' clothing for sale.

The climate of India is not so healthful as ours.

Its vegetable is different from ours.

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Silk for ladies' dresses comes from France.

Children's toys are made in Germany.

Put in the marks that show possession:

The boys hats are old.

These girls books are torn.

Fill in the blanks in the following sentences, using some form of the word given in parentheses:

Tom is good, but his brother is ——. (good)

The sick man is —— than he was yesterday. (ill)

Mr. Brown is —— than his wife. (old)

Write the singular and plural forms of mouse, house, scissors, child, women, tongs, news.

Mark the complete subject, complete predicate of the following sentence:

The color guard of our school consists of three boys.

Use the following words in sentences: beach, coarse, funnel.

Third Month.

Change singular nouns to plural and plural to singular:

The ax is a tool.

There is a church in the valley.

The man has a knife.

Write a sentence telling what things are using the plural of "fly."

Write a sentence showing quality of things using the plural of "child."

Use *bring* in sentence telling what is done to things.

Complete the following sentences, using some part of the word given in parentheses:

The horse was —— to the blacksmith shop to be ——. (drive, shoe.)

Water is first —— on top. (freeze.)

The winds had —— Christopher Columbus out of his course. (blow.)

The sun has —— every day this month. (shine.)

Dictate:

"You must be careful," said the pastor, "not to make a harsh sound on your violin."

"It would mar the music," said May, "so that it would not be pleasant to listen to."

Dictate:

Leonidas' victory.

Alexander the Great's victories made him ruler of a large part of the world.

Columbus' discovery opened the New World for colonization.

Write the possessive plurals of turkey, their, our, ox.

Write the different forms of smooth, many, beautiful.

In the following, write the singular if the plural is given; write the plural if the singular is given: leaf, chiefs, daisy, valley, gold.

Give the complete subject, complete predicate of the following sentence:

Did the principal reward the bright pupil?

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Address an envelope to your principal; your parent.
Write lines of "The Village Blacksmith."
Write a paragraph correlated with grade work.

Fourth Month.

Draw one line under plural form of nouns, two lines under possessive form:

Have you fed the cats?
The cat's milk is on the hearth.
The ducks are on the pond.
The duck's feet are webbed.
There are three little birds in the nest.
The bird's wing is hurt.

Write a sentence using plural of "man."
Write a sentence using possessive form of "Frank."
Write a sentence using possessive form of "girl."
Complete the following sentences, using some form of the words given in parentheses:

The thief —— some money. (steal.)
The woman has —— up the dust that —— on the floor. (sweep, lie.)
The fish —— away. (swim.)
I have —— a composition every week. (write.)

Dictate:

"The white people," said Mr. Grant, "made their entry into Alaska to carry on the fur trade."
"Did cold weather cause them great trouble?" asked Mr. White.
"Yes," replied Mr. Grant; "the nipping frost made every nerve ache."

Fifth Month.

Write a sentence using *write* in past time.
Write a sentence using *bring* in past time.
Write a sentence using *draw* in form with has, have or had.
Write a sentence using *go* in form with has, have or had.
Fill blanks with adjectives:

Of the two boys, Henry is the ——.
John and Harry are tall boys, but James is the ——.
I will take the —— of the two pieces.
Who is the —— girl in the class?
Let me carry the —— bundle of all. (heavy.)
The elephant is the —— animal in the show. (large.)
Give me the —— of the two pieces. (small.)
These apples are the —— of all in the orchard. (sweet.)

Punctuate the following:

When you go out Harry said his mother close the door.
Hark exclaimed the man I hear some one coming.

Write sentences using:

(a) Possessive singular of "baby."
(b) Possessive plural of "child."

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(c) Possessive plural of "dog."

Fill the blanks in the sentences with the proper form of the words in brackets:

He —— across the river last summer. (swim.)
The fireman —— his duty. (do.)
I —— my uncle last week. (see.)
The farmer —— up the potatoes. (dig.)

Complete the following sentences, using some form of the words given in parentheses:

I —— you when you were running away. (see.)
The man —— the horse too fast. (drive.)
Have you —— all your work? (do.)
Who has —— this pane of glass? (break.)
Have you —— the cellar deep enough? (dig.)

Dictate:

"The police arrested the thief," said my nephew, "but the king said he would pardon him."

"The cause of his theft was reported to be hunger," I answered, "so the king did not punish him."

Gives the rules for the use of each capital letter in the following:

(a) From my study, I see in the lamplight,
Descending the broad hall stair,
Grave Alice, and laughing Allegra,
And Edith with golden hair.

(b) Did Columbus remember to thank God when he first landed in America?

(c) "Father! I hear the sound of guns,
Oh! say, what may it be?"
"Some ships in distress that cannot live
In such an angry sea!"

In the four lines of poetry above, tell

(a) Why two sets of quotation marks are used.
(b) What is the meaning of the mark at the end of the second line?
(c) What is the meaning of the mark after *father, oh, sea?*

Use the following words in sentences: would, wood, guessed, guest; loose, lose.

Write abbreviations for doctor, ounces, avenue, captain, pounds, barrels.

Write contractions for he is, can not, we have.

Write in full you're, won't.

Write the different forms of bad, many, tall, fine, active, ambitious, pretty.

Give complete subject, complete predicate in the following sentence:
On the old oak table stood a vase of flowers.

Address an envelope to the postmaster asking about a "lost" letter.

Write eight lines of "The Mountain and the Squirrel," giving author's name.

Write five questions, using one of these words in each question: women's, children's, oxen's, babies', mice's.

Write a question about Nortli America.

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Graded Arithmetic Problems—4B

By FLORENTINE M. FULD.

Foot Note: The work for the first part of the term will appear in the October MONOGRAPHS.

281. From 12 take 3/8.——11 5/8.
282. How much money have I, if $5 is one-half of my money?——$10.
283. What part of 10c. is 7c.?——7/10.
284. How many bottles each containing one pint will be required to hold a gallon?——8.
285. What is the cost of 60 inches at 20c. a foot?——$1.
286. If 4/5 of a yard cost 60c., what will a yard cost?——75c.
287. If 18 books cost $3, what will 6 cost?——$1.
288. If one yard costs 75c., what part of a yard can I buy for 25c.?——1/3.
289. A boy found a quarter and earned 20c.; how many apples can he buy at 15c.?——3.
290. 12 inches is what part of a yard?——1/3.
291. If you go to bed at nine o'clock and get up at seven, how many hours do you sleep?——10.
292. If the dividend is 84 and the quotient is 6, what is the divisor?——14.
293. If I burn half a ton of coal in a week, how much will I burn in a month?——2.
294. If 9 apples cost 15c., how much will 3 cost?——5c.
295. If 5/6 of an acre costs $35, what is the value of the whole acre?——$42
296. $9 1/4 + $7 1/4?——$16 1/2.
297. How many inches of tape are required around a towel 6 inches by 9 inches?—30.
298. If I divide 13 quarts among 39 people, how much will each person receive?——1/3
299. If 5/8 of my money is 25c., how much money have I?——40c.
300. I bought 3 loaves of bread at 7c., and 2 pounds of butter at 40c.; how much change from a two-dollar bill?——99c.
301. There are 56 children in a class and 5/8 are boys; how many boys? ——35.
302. The combined ages of two children are 27 years and one is 12 years old; how old is the other?——15.
303. A hat costs $48, and 2/3 of it is 4 times the cost of a coat; what is the cost of the coat?——$8.
304. If 11 pencils cost 25c., what is the cost of 44?——$1.
305. How many square feet in 11 square yards?——99.
306. How many cubic inches in a box 3 × 4 × 2 inches?——24.
307. Reduce 45/54 to lowest terms.——5/6.
308. What is the cost of 12 ounces of butter at 28c. a pound?——21c.
309. I sold for 39c. what cost 43c.; gain or loss?——4c. loss.
310. How many cubic inches in a box 4 × 3 × 5?——60.
311. What is the cost of 5 yards at 2c. an inch?——$3.60.
312. From the sum of 19 + 7 take their difference.——14.
313. 18 + 7 ÷ 5 × 7 + 1 ÷ 9.——4.
314. Change .8 to a common fraction.——4/5.
315. Reduce 100/7 to a mixed number.——14 2/7.
316. How many yards of lace are required around a cover 4 yards by 3 yards?——14.

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317. How many cents in $\frac{3}{8}$?——37½c.
318. I had $10 and spent $6\frac{2}{5}$; how much change did I receive?——$3\frac{3}{5}$.
319. $\frac{2}{3}$ of a cord of wood at $6 a cord will pay for what part of a ton of coal at $8 a ton?——½.
320. If 3 boxes cost 15c., what is the cost of 7?——35c.
321. What is the value of 600 eggs at $\frac{1}{2}$ a dozen?——$25.
322. Change 17/3 to a mixed number.——$5\frac{2}{3}$.
323. Change 75/100 to lowest terms.——¾.
324. $8 \times 9 \div 6 \times 2 - 24 \times 7 + 8$.——8.
325. How many months in $8\frac{3}{4}$ years?——105.
326. How many thirty-ninths are the same as 10/13?——30/39.
327. What is the cost of two dozen oranges if six cost 15c.?——60c.
328. How many square inches in a box cover 15 inches by 12 inches?——180.
329. If an ounce costs 5c., what is the cost of a pound?——80c.
330. At 5c. each, how many pencils can be bought for 60c.?——12.
331. At 8½c. a pint, what is the cost of 2 quarts?——34c.
332. At 45c. a pound, what part of a pound can be bought for 15c.?——⅓.
333. At $10 a ton, what is the cost of 1/10 of a ton?——$1.
334. How many square feet in the top of a table 1 yard by 2 feet?——6.
335. If two pounds of sugar cost 12c., what is the cost of ⅓ of a pound?——2c.
336. $25 + 12 + 9 - 18 + 13 - 9$.——32.
337. Reduce .16 to a common fraction.——4/25.
338. $4 \times 13 - 17$.——35.
339. Reduce 97/4 to a mixed number.——$24\frac{1}{4}$.
340. Reduce 32/48 to lowest terms.——⅔.
341. Bought a desk for $60 and sold it at a loss of $15; what was the selling price?——$45.
342. From 7×8 take 3×12.——20.
343. $8\frac{3}{4}$ yards of ribbon are cut into ¼-yard pieces; how many pieces?——35.
344. What is $\frac{3}{5}$ of $60?——$36.
345. How many feet in a mile and 5 feet?——5,285.
346. If 6 eggs cost 12c., what is the cost of 6 dozen?——$1.44.
347. Each of 16 rooms has 50 desks; how many desks are there?——800.
348. $7 + 8 + 9 + 30 + 18 + 29$.——101.
349. What is the cost of 108 inches at 5c. a yard?——15c.
350. What is the cost of 72 inches at 10c. a foot?——60c.
351. I bought a book for 18c., and sold it to gain 15c.; how many pens at 3c. can I buy with the money received?——11.
352. Change 184/6 to a mixed number.——$30\frac{2}{3}$.
353. At 4 for 7 cents, what is the cost of 48 books?——84c.
354. At 4 for 5 cents, what is the cost of 32?——40c.
355. If one yard costs 54c., what is the cost of 20 inches?——30c.
356. What part of a yard are 27 inches?——¾.
357. If one yard costs 30c., what is the cost of 2 feet?——20c.
358. How many inches around a towel which is 12 inches by 20 inches?——64.
359. John is 15 years old, and ⅔ of his age is ¼ of his father's age; how old is his father?——40.

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360. Change 32/3 to a mixed number.——10⅔.
361. How many fourths in 5¾?——23/4.
362. 17 + 29.——46.
363. A girl is 12 years old, and this is ⅜ of her mother's age; how old is her mother?——32.
364. If a foot costs 16c., what is the cost of 9 inches?——12c.
365. ⅝ of 48 is 3 times what number?——10.
366. How many square inches in a surface 12 inches by 15 inches?——180.
367. 7 × 7 + 3 + 2 ÷ 6 ÷ 3.——3.
368. 7½ + 2⅔.——10⅙.
369. Change 42/10 to a mixed number.——4⅕.
370. I had $12, and spent $8; what part was spent?——⅔.
371. How many inches in a carpet ¾ yard long?——27.
372. How many square inches in the top of a box 12 inches by 9 inches?——108.
373. How much did I gain if I sold for $50 what cost $47½?——$2½.
374. 93 + 28 + 35.——156.
375. I sold for $60 and lost $10; what was the cost?——$70.
376. I sold for $90 and gained $10; what was the cost?——$80.
377. If 19 apples cost 57c., what is the cost of 25?——75c.
378. If 17 books cost $153, how many can I buy for $198?——22.
379. 75 — 36?——39.
380. How many square yards in a rug 9 feet by 12 feet?——12.
381. How many rods around a field which is 20 rods square?——80.
382. What is the cost of 12 boxes each containing 6 jars at $½ a jar?——$36.
383. A girl has 76c., which is 19c. less than her sister has; how much has her sister?——95c.
384. If 3 pounds contain 7 packages, how many packages are there in 21 pounds?——49.
385. At 16c. a gallon, what is the cost of a quart?——4c.
386. A butcher paid $84 for hogs at $12 each; how many had he?——7.
387. If a man saves $12 a month, how long will it take him to save $720?——5 years.
388. At 5½c. each, what is the cost of one dozen pens?——66c.
389. Change 54/5 to a mixed number.——10 4/5.
390. Raised 168 bushels of grain and sold ⅓ of it; how much did I sell?——56.
391. I bought a book for 75c., a pencil for 8c., and a slate for 15c.; how much did I spend?——98c.
392. What will ¾ of a yard cost, if one yard costs $16?——$12.
393. If I give away 25 pounds of candy to 50 children, how much will each child receive?——½ pound.
394. 7 + 9 + 13 + 6 + 4.——39.
395. $5½ + $2½?——$8.
396. I bought butter for 39c., rolls for 5c., and 3 eggs for 9c.; how much change from a one-dollar bill?——47c.
397. If 3 apples cost 5c., what is the cost of 9?——15c.
398. If 12 yards of ribbon cost 24c., what is the cost of 6?——12c.
399. Take ⅔ away from ⅚.——⅙.
400. If ⅔ of an acre costs $40, what is the cost of a whole acre?——$60.

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Geography—Details of Work—5A*

By ALBERT LEVINE.

Fifteenth Week.

WHEAT STATES.

Minnesota and The Dakotas enjoy a climate that is favorable to raising wheat. The soil is rich and ground level. Not all the land is owned by individuals. A great deal of it belongs to the Government. The West is but thinly populated. We are trying to get more men to go out and the Government is giving away periodically parcels of land for the asking. The farmer lucky to obtain a "homestead" must within six months of obtaining same erect some sort of cottage to show the authorities that good faith is maintained, that the farmer will stay here and make his home.

This region produces a great deal of wheat. Such crop must be disposed of to other cities and countries. How is it shipped? In bags after being ground into flour. There would naturally arise a demand for mills. By steam? But there are many small streams. These supply the motive power. Minneapolis and St. Paul owe their rapid growth to this demand. They are both situated upon a bend of the river.

Did you ever see modern farm-work? What change do you observe? Preponderance of machinery over manual labor. Where are these machines used? On plains many miles in extent. These machines are purchased and factories manufacturing the same sell individual parts broken or worn out. Can the farmer, who, as a rule, is not an expert machinist, wait till the part comes by a slow process from New York? Where would he purchase his machine? Right near home. There is a demand then for farming tools, and Detroit and Chicago supply it.

Minnesota is covered with forests. Lumber must be had for the manufacture of furniture, etc., and the low price of product must be offset by the cheap price of the raw material. There are many sections full of desirable lumber not worked because of the expense involved—too far from railroad, or scarcity of streams. This State is fortunately located near available streams.

Let us watch a logging outfit. At the approach of winter the "outfit" sets out to the woods near some stream that connects with a larger one near a city or mill. Tents are pitched. Men in pairs chop down trees and pile them up. The streams are frozen as yet. As the snow thaws at approach of spring these logs are thrown into them. Each logging camp makes a "mark" on their logs to be recognized in the "jam." These logs are driven down the stream by men armed with long poles. Sometimes logs careen and stop up channel. A man accompanies a drive, riding it out on a log. This is the most dangerous part of the proceeding. He must skillfully disengage the obstructing log and set the rest going in the right direction. As the streams gather speed and volume from the melting ice and neighboring rills, logs come down a great deal more rapidly. At a convenient turn of a stream a mill is erected. Owners drag out their logs marked with private sign and haul them up on a platform to be sawn up into boards of marketable lengths.

Reason the same way about St. Louis, its position at the head of navigation, etc. The West ships also through St. Louis to ports in the South and in Europe.

**Continued from March,* 1908, MONOGRAPHS.

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Kansas City receives some of the beef trade. Not all ranches wish to ship all the way to Chicago. They drive to the nearest point, Kansas City, and from there by train to neighboring points.

Sixteenth Week.

As we travel more westward we note a change in climate and a consequent diversity in produce. The Rocky Mountains are rich in minerals and "prospectors" strike out upon new trails continuously. New places yield precious metals, an influx of population is induced, and in course of time, depending upon the strength and durability of the "boom," new cities spring into existence. The intervening plains support countless hordes of cattle, sheep and horses.

Wyoming has a national park, a beautiful spot set aside by the Government for the delectation of tourists. All animal life on our continent is represented and the last herd of Buffaloes is exhibited. The West is still richer in possibilities. Precious metals are still mined and abandoned spots are re-opened because of improvement in dredging machines that make it profitable to work poor or indifferent soil.

Arizona and New Mexico are still territories. It has been our policy to remove the Indian from his native haunts, thereby severing all fragrant memories of yore that still rankle in his savage heart. He is assigned to a spot, a reservation, in charge of an Indian agent, whose duty it is to keep him contented. They are being educated in trade schools. The younger men are amenable to this civilizing influence and it is hoped that these youngsters will react favorably upon the present generation and in time be assimilated. The West is full of half-breeds—men who have married Indian women and vice versa.

Now and then some old warrior will listen to the voice of savage protest that rises in his heart against the cupidity and cruelty of the white men. He gathers his warriors about him and launches upon a short career of bloodshed and rapine. The movement is short-lived, and the eagle wariness of our troops destroys any possibility of plundering white men with impunity.

Seventeenth Week.

The Pacific States are very important shipping and trading centers. They carry on a trade with the Asiatic countries, principally with Japan and the Philippine Islands. Our newly acquired possessions have added materially to our responsibilities as a world power. The Pacific Ocean is our next point of dispute. Japan is rapidly rising in the estimation of the world. Russia fell easily to Japan's indomitable persistence and onslaught. Our relations with Japan are somewhat strained.

Recently we dispatched sixteen battleships under Admiral Evans to constitute our Pacific armament. Japan is half disposed to resent this move. In spite of the eager protestations of friendship and good will existing between Japan and America there seems some certainty that in the near future we may have to take arms against Japan in a gigantic struggle for the mastery of the Pacific.

Principal ports are Portland, Seattle, Tacoma and San Francisco.

Eighteenth Week.

We have learned of a great many things produced in this country. Do we use it all for our own consumption? We sell it to other countries.

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Name some things you have for breakfast. Do we raise all this coffee, sugar and tea? We get it from other countries. We also get, for instance, cigars and silks. Because we can't get these in our own country, or it is too expensive to raise it here. What we sell constitute our exports; what we buy is listed as imports.

EXPORTS, 1900.

	ARTICLES.		PRINCIPAL COUNTRIES TO WHICH SENT.
1.	Cotton (mainly unmanufactured)	$265,836,000	Great Britain, Germany, France, Japan.
2.	Breadstuffs (wheat, corn, flour, etc.)	262,744,000	Great Britain, Germany, Holland, Belgium.
3.	Meat and dairy products	184,453,000	Great Britain, Germany, France, Belgium.
4.	Iron and steel and manufactures of	121,914,000	Great Britain, Canada, Germany, Mexico.
5.	Mineral oils	75,612,000	Great Britain, Germany, Holland, Belgium.
6.	Copper (manufactures of)	57,853,000	Great Britain, Holland, France, Germany.
7.	Wood (manufactures of)	50,598,000	Great Britain, Canada, Germany, West Indies.
8.	Animals (mainly cattle)	43,585,000	Great Britain.
9.	Tobacco	35,433,000	Great Britain, Germany, Italy, France.
10.	Leather (manufactures of)	27,293,000	Great Britain, Australasia, Canada.
	Total value exports	$1,394,484,000	

	ARTICLES.		COUNTRIES FROM WHICH COME.
1.	Sugar and molasses	$101,141,000	East Indies, Hawaiia, Cuba, Germany.
2.	Silk and manufactures of	76,224,000	Japan, France, China, Italy.
3.	Hides and skins	57,936,000	East Indies, Hawaii, Cuba, Germany.
4.	Fibres and manufactures of	57,933,000	Mexico, Philippines, East Indies.
5.	Chemicals, drugs, etc	53,705,000	Germany, East Indies, Great Britain.
6.	Coffee	52,468,000	Brazil, Central America, East Indies, Mexico.
7.	Cotton manufactures of	49,502,000	Great Britain, Germany, Switzerland.
8.	Wool	36,425,000	Great Britain, Germany, France, South America.
9.	Rubber and rubber goods	33,860,000	Brazil, Great Britain.
10.	Fruits and nuts	19,264,000	Italy, Central America, West Indies.
	Total value imports	$849,941,000	

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Suggestive Questions—5A

NATURE STUDY.

Which animal would you place at the head of the animal kingdom? Give the reason.

Name two animals useful to man. Why?

Name two animals harmful to man. Why?

What are vertebrates? Name five.

What is the difference in the covering of birds and fishes? Why? Where does each live?

What animal supplies us with material for clothing? How do we get this material?

What is the difference between a whale and a fish?

Name two invertebrates. Describe each.

What is the great difference between vertebrates and invertebrates?

How are coral reefs formed?

What are mammals? Name two.

Tell of what use dragon flies are.

For what is the camel used? Why?

Name some great difference between a bat and a bird.

What means of defense have the folloiwng animals: deer, bee, snake, lobster?

Tell how color protects the following animals: polar bear, frog, grasshopper.

To which of the two great classes do the following animals belong: corals, sponges, oysters, ostrich, frog?

Tell how the following animals breathe: fish, birds, insects.

SPECIMEN EXAMINATION PAPERS IN LANGUAGE WORK—5A.

I.

(1) Insert the following prepositions: to, with, into, at, for.

I am going —— aunt's house.
Will you sit —— me?
Put the pencil —— the desk.
Is your sister —— home?
Look —— the picture.

(2) Count 2 for spelling of words.

She was planting *potatoes* in the field.
The soldiers were *permitted* to go home for a few days.
There were many *ladies* in the gathering.
Women's voices should be soft.
The *ocean's* roar can be heard in a shell.

(3) She has —— her books. (forget.)
The people of the court —— Joan of Arc on a white horse. (see.)
Yesterday I —— a great many things. (do.)
The bell is ——. (break.)
The gong has been ——. (ring.)

(4) In the fields are many beautiful flowers.

Kind of sentence? Why?
Complete subject? Why?

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Complete predicate? Why?
Subject word?
Predicate word?

(5) To the island of St. Helena Napoleon was banished.
Kind of sentence? Why?
Complete subject? Why?
Complete predicate? Why?
Subject word?
Predicate word?

(6) The Vatican is the home of the Pope.
Tell what the sentence shows.

Alexander, the Great, conquered Egypt.
What does the sentence show?

Socrates was poisoned with hemlock.
What does the sentence show?

The dress is old.
What does the sentence show?

Write a sentence telling "what things do."

II.

(1) Give five rules for the use of capital letters. Write a sentence containing an example under each rule. Draw a line under the word. (10)

(2) Write ten abbreviations. (10)

(3) Write five sentences containing the following words: me, seen, by, bring, boys'. (10)

(4) Write the plurals of the following words: calf, lady, turkey, branch. Give rules for the spelling of the plurals. (10)

(5) It is not easy to divide one plate of ice cream —— four boys. Supply the missing word. (5) If there had been *two* boys, what word would you have used? (5)

(6) A silver quarter is a *large* coin, a half dollar is ——, but the silver dollar is ——. Supply the missing words. (6) What class of words did you use? (4)

(7) A boy who scores only 5 in a game has a *little* score; the boy with 3 has a —— score, and the boy with 1 has the ——. Supply the missing words. (8).

(8) (lie) Fill in the proper form of the verb "lie" in the blank space: My father has —— down to rest. (6) (see) Fill in the proper form of "see" in the blank space: I —— my brother before he sailed for Europe. (6)

(9) Write the last syllables of the following words: stranger, relations, wanted, changes, morning. (10)

(10) Write the following words in the form of contractions: was not, do not, I will, I would not, is not. (10)

III.

(1) Place the following words in the proper blanks: in, into; to, at: among, between:

The boy who was —— the yard ran —— the street. (4) You may have the apple to divide —— you and your brother. (4) In the corner,

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—— all the papers and rubbish, slept the homeless dog. (4) Cinderella went —— the ball. (4) Were you —— the circus? (4)

(2) Use the words, large, larger, largest, properly in the following sentences:

Which is the —— river in Europe? (5) Which is the —— river, the Rhine or the Thames? (5)

(3) Use bad, worse, worst in the following: To be careless of the lives of others is a —— habit of an engineer. (5) It is —— for him to be careless than to be ignorant. (5) The —— accidents occur through carelessness. (5)

(4) Rewrite the following sentences and change the words meaning *ownership* to words meaning more than one: The lily's color is pure white. (5) The boy's shoes are made of heavy leather. (5) The ox's horns are strong and curved. (5)

(5) Underline the subject and predicate in the following sentences: The natives of British India perform many wonderful tricks. (5) The tired horse carried a heavy burden. (5)

Underline the subject *noun* and predicate *verb* of the following: In the valley lived a modest violet. (5) Mr. Lee was writing a letter. (5)

(6) Write questions containing the following words in the plural, to show ownership (*punctuate carefully*): lady, leaf, dress. (12)

Write statements using the following words: done, seen. (8)

IV.

(1) Write the *plural possessives* of the following words: hero, grass, woman, he, you.

(2) Charles's sheep are not as woolly as ours. Rewrite this sentence, using the nouns and pronouns in the singular number.

(3) Write the degrees or forms of these words: long, healthy, little, beautiful.

(4) Write a sentence telling the "quality of things," using *snow*.

(5) Write a sentence telling "what things are," using *ice*.

(6) Use the correct form of *sit* or *set* in this sentence: Mother —— in this chair.

(7) Use the correct form of *lie* or *lay* in this sentence: Carrie has —— the book on the table.

(8) Use either *between* or *among*, and *in* or *into*: Divide these nuts —— you and Ann, and throw the shells —— this basket.

(9) Use the correct form of *come* in the following sentence: Christmas has —— and gone.

(10) Use the correct form of *see* in this sentence: Mary and I —— the fire.

ARITHMETIC.

I.

Oral.

(1) What is the sum of 5¾ and 3⅔? $9\frac{5}{12}$.

(2) What is 7/9 of 63? 49.

(3) If ¼ of a number is 24, what is the number? 96.

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(4) If 5/6 of a number is 30, what is the number? 36.
(5) From 3 3/5 take 5/6. 2 23/30.
(6) Reduce 18/42 to its lowest terms. 3/7.
(7) What will be the cost of 36 books at $0.16⅔ each? $6.
(8) Multiply ¾ by ⅔. ½.
(9) Divide 6/12 by ¾. ⅔.
(10) Divide 8/15 by 4. 2/15.

II.

Written.

(1) Add

$$\begin{array}{r} \frac{5}{6} \\ 7\frac{7}{8} \\ \frac{7}{8} \\ 9\frac{9}{16} \\ \hline 2\ 4\frac{1}{16} \end{array}$$

(2) Take 9 8/9 from 20½. 10 11/18.

(3) Divide 95/114 by 35. 1/42.

(4) Multiply 21⅓ by 4½. 96.
(5) Divide 11/24 by 33/36. ½.
(6) Multiply 9 ⅛ by 18. 170.
(7) Reduce 288/360 to lowest terms. ⅘.
(8) Reduce 172/1118 to lowest terms. 2/13.
(9) Reduce 738/24 to a mixed number. 30¾.
(10) What is the cost of 320 feet of wire fence at $1.12½ a foot? $360.

III.

(1) If 6 pounds sugar cost $.25, what will 150 pounds cost?
(2) If $⅓ will buy 2 dozen eggs, what will 1,200 eggs cost?
(3) At 5 cents a pound, how many pounds of starch can be bought for $25⅛?
(4) What number of cents multiplied by 12 will give $15?
(5) A man selling a farm of 60 acres for $5,500, lost $500. What did it cost him per acre?
(6) Nine inches is what part of 2 yards?
(7) From ⅔ of ⅚ of 12½ take 2⅓.
(8) Find cost of 2 barrels vinegar at 5 cents a quart. A barrel contains 31½ gallons.
(9) Multiply 13 by .13.
(10) Divide .1 by .0001.

IV.

(1) Change forty-five thousandths to a common fraction, lowest terms.
(2) Take ¾ of ½ of ⅚ of 8/9 of 4½ (by cancellation).
(3) Bought of S. A. Brown & Co., 110 Fulton street, Brooklyn:

14 yds. satin .....@ $1.50
24 yds. linen .....@ .65
12 yds. linen .....@ .37½

Make the bill out to-day in your own name. Receipt the bill.

(4) Add 68¼, 4⅖, 18 7/12, 6 3/16, 25 7/24.
(5) Reduce 324/432 to lowest terms, using G. C. D.

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(6) A grocer bought 7,200 gallons of oil; ⅓ of it leaked out. He sold the remainder at $0.25 a gallon. How much did he receive?

(7) Find the cost of a field 25 feet wide and 32 feet long, @ $1.37½ per square foot.

(8) Change 35/56 to a decimal of three orders.

(9) My gas bill is $12.85. I pay at the rate of $1.80 a thousand feet. How many feet of gas did I burn?

(10) Find the sum of: 65395, 127643, 758284, 69573, 912738, 84263, 627946, 369237. (Time, 1½ minutes for addition.)

GEOGRAPHY.

(1) Name the countries of North America. (10)

(2) Name the capital and most important city of each of the following countries:

a. United States. (4)
b. Canada. (4)
c. Mexico. (4)—(12)

(3) Give two exports of

a. Canada. (2)
b. United States. (2)
c. Mexico. (2)
d. Danish America. (2)—(8)

(4) a. Name the mountains belonging to the Pacific Highlands. (8)
b. Which two minerals are found in these mountains? (2)—(10)

(5) a. Name the river slopes of America (North). (5)
b. What river belongs to the Gulf Slope? (2)
c. Describe the river course of the river you named. (3)—(10)

(6) a. What connects North America and South America? (2)
b. What two cities will the Panama Canal connect? (5)
c. Name a city noted for the manufacture of iron. (2)—(9)

(7) a. Which is the largest city of the United States? (2)
b. Name a city noted as a wool market. (2)
c. What bodies of water will the Panama Canal join? (a)

(8) a. How many miles would you have to travel by rail in going from New York City to San Francisco? (4)
b. How long would the trip take you? (3)
c. On what lines would you travel? (3)—(10)

(9) Where in North America are the following obtained?

a. gold.
b. coal.
c. lumber.
d. silver.
e. cotton.
f. tobacco.
g. cochineal.
h. petroleum.
i. copper.
j. salt. (10)

(10) Name a steamship line connecting New York with Europe. (5)

(11) a. What canal crosses New York State? (2)
b. What two cities does it connect? (4)
c. What two bodies of water does it join? (4)—(10)

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Details of Work in Geography—5B*

By WALTER PRIMOFF.

SOUTH CENTRAL STATES.

Eleventh and Twelfth Weeks.

Location, boundaries.

Surface: The surface, except in the western part of Kentucky, Tennessee and Alabama, is all level. Swampy plains are around the coast.

Mountains: The Cumberland, which belongs to the Appalachian Range.

Coast Line: The coast is fringed with sandy reefs.

Bays: Mobile, Galveston.

Climate: This region has a warm climate with abundant rainfall.

Drainage and Rivers: Mississippi, Arkansas, Red and Rio Grande.

Resources:

Soil: The soil is very fertile almost throughout the entire region.

Forests: There are extensive forests in these States of oak, hickory, ash and poplar trees.

Fisheries: Oyster beds on Gulf coast of Mississippi.

Mineral and Oil Deposits: Deposits of coal and iron are found in the mountainous parts of the States of Alabama, Georgia, Tennessee and Arkansas; oil wells are found in Texas.

Industries, Occupations and Products: The most important industry is agriculture; cotton is the most valuable crop; other products are rice, sugar cane, tobacco and semi-tropical fruits; wheat is grown in Oklahoma.

Other important industries are lumbering for woods, which are converted into building materials.

Mining for coal and iron and drilling for oil.

Grazing: Cattle and sheep are raised in the western part, especially Texas.

Fishing: Oysters are found in Mississippi.

Manufacturing: Not much manufacturing is done as yet, but there are some cotton factories in Alabama.

Make table of States, capitals and cities.

Language Lessons: Cotton, Delta of Mississippi, levees.

MISSISSIPPI (BAYOU STATE).

Location, boundaries.

Size: Mississippi has nearly the area of New York State, but has only one-fifth of the population.

Surface: The surface is entirely level.

Drainage: Mississippi and Pearl Rivers.

Climate: Warm and tropical, with hardly any winter.

Resources:

Soil: The soil is very fertile, because of the often recurring overflow of the Mississippi and its branches.

Forests: Mississippi contains many forests, furnishing much lumber.

Occupations, Industries and Products: The chief industry is agriculture, this State being one of the leaders in the cotton industry.

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*Continued from March, 1908.

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Other industries are fishing for oysters, lumbering and manufacturing of lumber, cotton oil and cotton goods.

Cities: This is the only Gulf State with no seaport of its own. Jackson, on the Pearl River, is the capital. Vicksburg, on the Mississippi, is the largest city.

LOUISIANA (PELICAN STATE).

Location, boundaries.

Size: Louisiana is nearly as large as New York State, but has only one-sixth of the population.

Surface: The surface is generally level.

Drainage: Mississippi, Red and Sabine. This State has more miles of navigable rivers than any other State.

Lakes: There are many lakes in this State, mostly small ones.

Climate: The climate is very warm and mild, there being very little winter.

Resources:

Soil: The soil is very fertile and sometimes marshy.

Forests: There are extensive forests in the northern part of the State.

Minerals and Oil Deposits: This State has no mineral wealth at all, except a mass of pure rock salt situated in the southern part of the State.

Industries, Occupations and Products: The chief industry is agriculture, this State leading in the cotton and sugar industry; other products are rice and fruits.

Lumbering is another important industry, and mining for salt on an island in the southern part of the State.

Chief Cities: Baton Rouge, capital. New Orleans, leading cotton market of the world and greatest sugar market in the United States.

Thirteenth and Fourteenth Weeks.

NORTH CENTRAL STATES (9 STATES) (NORTHERN AGRICULTURAL SECTION).

LOCATION.

(a) These States occupy nearly the whole of the upper Mississippi Valley, and are in the Great Central Plain.

(b) Boundaries: N.—Great Lakes and Canada; E.—North Atlantic States, Canada and Ohio River; S.—Ohio River and South Central States; W.—Western States.

(c) Location of States with reference to each other: Michigan and Wisconsin are in the northeastern part of the North Central States; Ohio, Indiana and Illinois are in the southeastern part; Minnesota, North and South Dakota are in the northwestern part; Iowa, Nebraska, Kansas and Missouri are in the southwestern part. This group has no seacoast but a very extensive lake coast.

SURFACE: HIGHLANDS AND LOWLANDS: DRAINAGE: IMPORTANT RIVERS: CANALS.

(a) The surface is mostly level and consists mainly of prairies and rolling lands, the only important highlands being the Black Hills of South Dakota, the foothills of Michigan and Minnesota, and the Ozark Mountains

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of Missouri. *Prairie* is a French word meaning "meadow." Prairies are untimbered grassy plains.

(b) Drainage: These States are drained by the Mississippi River and its branches. The most important of these branches are the Arkansas, Missouri, Ohio and Illinois. Other important rivers are the Red River of the North, and the Detroit. All these rivers are subject to overflowing.

Lakes: All the great lakes except Ontario are in this section. Lake Superior is the largest fresh water lake in the world. Lake Michigan is the largest lake wholly within the United States. The boundary line between United States and Canada passes through the middle of all these lakes, except Michigan. Michigan, Minnesota and Wisconsin contain many small lakes.

Value of watercourses to this section:

(a) *To soil*—Enriches and fertilizes soil.

(b) *To navigation*—Makes much shipping and transportation possible.

(c) *To manufacturing*—Much manufacturing made possible.

CLIMATE: TEMPERATURE AND RAINFALL.

In the northern part the winters are long and severe, and the summers are short and hot. In the southern section the winters are shorter and milder, and the summers are longer and hot. The region is healthy because the air is dry and pure. The westerly winds are dry because they lose their moisture when they strike the high western plateaus. The warm winds come from the Gulf, the cold winds come from the north. Tornadoes and blizzards occur frequently. The cattle feed out all winter and many die of cold and starvation. There is just the right amount of rain for good crops.

RESOURCES.

(a) Soil: The soil is rich, fertile and free from stones. It is very productive, being the richest agricultural region in the United States.

(b) Forests: Michigan, Wisconsin, Minnesota, and Ohio, contain extensive forests of pine and a few hard woods.

(c) Mineral and Oil Deposits: In the north, around Lake Superior, there are rich deposits of iron ore, copper, salt, and hard and soft coal. In the center, there are deposits of coal, petroleum and natural gas. In the south there are coal, lead and iron ore deposits.

(d) Fisheries: Mostly in the Great Lakes.

INDUSTRIES AND OCCUPATIONS.

The chief occupation is agriculture (*Agri*="field."). Other occupations are stock raising (ranching), lumbering, mining, and, chiefly in the cities, manufacturing and commerce.

PRODUCTS.

It is a great grain, lumber and meat producing region.

(a) Animal: Horses, cattle, sheep, hogs; hides, bristles, glue, gelatine, lard, meat (fresh and canned). In North and South Dakota, where the rainfall is uncertain, they engage chiefly in stock raising (grazing). The animals are raised on the prairies because of the plentiful supply of grass.

(b) Vegetable: It is a great corn region, because the intense heat of

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summer causes the corn to ripen rapidly. Other products are wheat, oats, rye, potatoes, lumber, and fruits. Cotton cannot be grown, because the summers are too short, and rice cannot be grown, because there is not sufficient moisture.

(c) Mineral: Iron ore, copper, salt, coal, petroleum, natural gas, lead.

(d) Manufactures: Iron and steel, machinery, flour, petroleum, and lumber (furniture).

Name the States, capital, and chief city of each.

Teach abbreviations of the names of the States.

ILLINOIS (PRAIRIE STATE).

Location, boundaries.

Size: England and Wales combined contains about the area of Illinois. Illinois has about the same area as New York State and about half the population.

Surface: Illinois is the most level State in the Union, and contains only prairies. The State is really a vast plain.

Drainage—Rivers: The State contains three rivers, Mississippi, Ohio and Illinois. The *Drainage Canal,* recently built, connects Chicago with the Illinois River, and so with the Mississippi River. All the sewage of Chicago empties into the Mississippi River, through the Drainage Canal and the Illinois. The Illinois River empties into the Mississippi, a little above St. Louis, which drinks the water from the Mississippi. So the latter city not long ago brought suit against Chicago to prevent her emptying the sewage into the Mississippi River. But the United States Supreme Court sustained Chicago, after experts had shown that at the junction of the Illinios and the Mississippi the river flows so fast that the drainage sinks down and only pure water flows by.

Lakes: Michigan.

Climate: The climate is that of the other North Central States.

Resources: (a) Soil—Very fertile. (b) Forests—There are practically no forests. (c) Mineral and Oil Deposits—The soft coal fields extend over three-fifths of the State. In the northern part there is much lead, and in the southern part salt is found. (d) Fisheries—Lake Michigan yields much whitefish and sturgeon.

Industries and Occupations: Agriculture is the chief occupation; horses and cattle are raised also.

Products: Illinois is the first State in the Union in the *production of corn.*

Animal: The animal products are those of the North Central States.

Vegetable: Corn and oats are produced in great quantities.

Mineral: Much coal is mined; and lead and sale are mined in lesser quantities.

Manufacturing: Illinois is the third State in the Union for manufacturing. Iron and lumber are manufactured.

Chief Cities: *Chicago* is the second largest city in the United States. It is the greatest railroad center, and meat and grain market in the world. It has a great lake trade, and the greatest stock-yards, meat packing estab-

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lishments and grain elevators in the country. Clothing also is manufactured here.

Peoria has great stock-yards, and meat packing establishments.

Springfield, the capital, is a coal mining center.

Show pictures and tell stories of stock-yards, and how every part of the slaughtered animal is utilized.

MINNESOTA (GOPHER STATE).

(Gopher=prairie dog. Show pictures and tell about them.)

Location, boundaries.

Surface: The surface is a level elevated tract of land, but contains many small hills.

Drainage: Mississippi, Red and Minnesota.

Lakes: The State contains over 1,200 small lakes, one of which is the source of the Mississippi (Lake Itasca). The largest lake is Lake Superior.

Climate: Long, cold winters; hot, short summers; but the climate is dry and healthful.

Resources: Soil—The soil is generally fertile, especially along the river valleys; one-half is timbered, the rest is prairie. Forests—The State contains many sections of land containing hard and soft wood trees. Mineral deposits—The mines of iron ore in the northeast are the most extensive in the world.

Industries and Occupations: Grain farming is the principal industry. Lumbering is carried on along the river courses. Owing to the abundance of water power, much manufacturing is carried on.

Products: Vegetable—Minnesota is the greatest wheat producing State in the Union. Another product is lumber. Mineral—Iron ore is mined. Manufacturing—Iron, flour and lumber are manufactured.

Chief Cities: Minneapolis, situated at the falls of St. Anthony, is a great flour-milling and lumber-sawing section. St. Paul, at the head of navigation of the Mississippi, is a commercial center. Minneapolis and St. Paul are twin cities like Brooklyn and New York. Duluth is a lake port.

Make a table of rivers of this section:

Name.	*Source.*	*Flows.*	*Empties.*
Mississippi	Lake Itasca	South	Gulf of Mexico.
Missouri	Rocky Mountains	Southeast	Mississippi.
Ohio	Alleghany	Southwest	Mississippi.
Arkansas	Rocky Mountains	Southeast	Mississippi.
Illinois	Wisconsin	Southwest	Mississippi.
Red	Minnesota	North	Canada.

Suggestive Questions—5B

NATURE STUDY.

Name the classes of plants. (a) Describe each kind. (b) Name two of each class.

What are the parts of any plant?

Give the uses of each part to the plant.

Of what uses is the root of a plant to man?

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Name two plants whose roots are useful to man.

Name three plants whose leaves are useful to man.

When the plant is young which part contains the life?

When the plant is old which part contains the life?

Draw a cross-section of a tree, naming parts of trunk.

Draw a cross-section of trunk of tree, showing rays and rings.

How can you tell the age of a tree?

Name two uses of the outer bark to a tree.

Name three uses of the outer bark to man.

Which is the more valuable to man—the heart wood or the sap wood? To the tree?

Trees are divided according to their use into how many classes? Name them. Give an example of each.

What are deciduous trees? Example.

What are evergreen trees? Example.

Of what use is the sap to the tree? When does it rise in it? Name three trees whose sap is useful *to man.*

What differences are there in the growth and structure of trees, shrubs and herbs? Give an example of each.

Of what use is the wood to the tree? To man?

Why is the wood of the mahogany tree so much costlier than that of the pine?

State briefly how the wood from the tree is transformed into the morning newspaper that you read.

Which is the growing part of the tree? How might you find this out? Of what use is this knowledge to the boy looking for maple sugar?

Mention five trees important as shade trees. Five that furnish us some form of food.

How could you recognize a maple tree from an apple tree in the distance?

How do you know that a pine tree sheds its leaves as well as one of the deciduous trees, like the elm?

How do forests help to preserve the fertility of the soil?

How do they prevent freshets?

ARITHMETIC.

I.

Write the following from dictation and add: 80,088.008; 723,001.00023; 55,100.000905; 867,529.10723; 909,009.90009. (5) (5)——(10)*

Multiply 27.05 by .098 and also 5.478 by .027. Find the difference of the results. (10)

A man had $601.72. He spent 62½% of it. How much had he left? (10)

Multiply 27.05 by .098 and also 5.478 by .027. Find the difference from the results. (10)

Divide 8.19 by .017 and add 4.005 to the quotient. (10)

**The numbers in brackets are credits for correct answers.*

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If $9,615 is .83⅓ of a man's salary, what is his salary? (10)

(a) 720 is what decimal part of 1152? (5)

(b) Change to a common fraction and reduce to lowest terms .0125. (5)

If a man sold a house for $10,000, which was .375 more than he paid for it, how much did he pay for it? (10)

Simplify: $\frac{(3/8 \text{ of } 56/63 \text{ of } 9/24)}{(25/27 - 1/3)}$ (10)

How many sheets of paper are there in 59 reams and 6 quires? (10)

II.

If $9,615 is .83⅓ of a man's salary, what is his salary? (10)

A man had $601.72. He spent 62½% of it. How much had he left? (10)

If 2 pounds of starch cost 12½c., how many pounds can you get for $3.75? (10)

Divide the product of 7.08 and 9.4 by the product of 36 and .8. (10)

Change the following to common fractions:

.003½, .18⅛, .07½, .23¼. (10)

If pencils are $.27½ a dozen, what are 5⅓ great gross worth? (10)

Take the sum of 38.495, 89.06, and 87¾ from 216⅜. (10)

John's father receives a salary of $3,500, of which he pays 15% for rent. How much does he pay? (10)

Make a bill of the following, and receipt it:

You buy of Siegel, Cooper Co., 6th Ave. & 18th street, June 15, 1906: 96 kegs of large nails, at $2.87½ a keg; 84 kegs of small nails, at $1.62½ a keg; 750 nails, at $.43 per 1,000; 250 screws, at $.36 per 1,000; 300 picture hooks at the rate of 3 for $.05. (10)

Write the following from dictation and add: 80,088.008; 723,001.00023; 55,100.000905; 867,529.10723; 909,009.90009. (10)

III.

600.225 divided by 7500 (short method).

Find the area of a square field, the distance around which is 640 rods.

Divide 8.19 by .017, and add 4.005 to the quotient.

(a) 720 is what decimal part of 1152?

(b) Change .0125 to a common fraction, and reduce to lowest terms.

Simplify: $\frac{(3.8 \text{ of } 56.63 \text{ of } 9/24)}{(25/27 - 1/3)}$

What is the value of 68,460 bricks at $7.62½ per 1,000?

Joseph R. Simon has bought the following goods of Arthur M. Levy. Make out and receipt a bill dated June 4, 1905:

Jan. 3, 1905— 7 gross pencils.....@ $1.16 a gross.
50 quires of paper.....@ .15 a quire.
17 reams of foolscap....@ 1.40 a ream.
60 dozen penholders ...@ .45 a dozen.

Mr. Smith has $2,000, which is ¼ more than I have. How much money have I?

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What will it cost to paint the outside of a frame house 50 feet long, 32 feet wide, and 25 feet high, with 3 coats, at $.10 a square yard?

(Dictate the last five minutes of period.)

Add: 753.694; 272.83; 16,251.6; 62.8394; 569.27; 34.5283; 796.45; 58.4269; 17,264.5.

(Time, 2 minues for addition.)

GEOGRAPHY.

Name the countries of North America. (5)

Which countries border on the United States? (2)

Between what two oceans does the United States lie? (2)

Name and locate the capital of the United States. (2)

Name two great highlands of the United States. (2)

What natural region between the ranges? (2)

What great river flows into the Gulf of Mexico? (1)

Name its eastern tributary? (1)

Name its three western tributaries. (3)

Into what groups of States is the United States divided? (5)

Name the principal industries of each section. (5)

Name five leading exports of the United States. (5)

Tell in what part of the country each is found. (5)

Name a railroad route between New York City and Albany. (4)

Between New York City and Boston. (3)

Between Portland, Maine, and Montreal, Canada. (3)

Name in order of their size the ten largest cities of the United States. (5)

State the conditions that determined their locations. (5)

Name and locate a manufacturing center of the United States. (5)

Name and locate a river port. (2)

Name and locate a city noted for cotton trade. (2)

Name and locate a lake port. (2)

Name three exports of Massachusetts. (3)

Name and locate its chief city. (2)

What great university is near it? (1)

What State is called the Empire State? (1)

Name and locate its chief city. (2)

How would you go by water from New York to Buffalo? (5)

What canal crosses New York State? (2)

Give three reasons why New York City has developed so rapidly. (6)

Name its boroughs. (5)

In which one do you live? (1)

For what are the following cities noted: Buffalo, Rochester, Syracuse, Utica and Troy?

LANGUAGE.

In the following sentences state the subject word, predicate verb, and complement:

In the meantime there appeared before the astonished gaze of the onlookers a man and a bear.

They asked to see the wonderful sight in the box and promised not to tell anyone.

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Among the captives were Indians and Frenchmen.
They bought several tons of coal and a load of wood.

Correct the fault in these sentences:

It is him.
Them are my books.
He gave it to they.
Him and I will go.
Between you and I, they were fine.
Those books is mine.
Here are my brother.
I seen him done it.
John and James is here.
He has went home.

Geography—6A

By R. H. WHITBECK.*

Eleventh to Fourteenth Weeks.

SOUTH AMERICA AS A WHOLE.

Situation: Not directly south of North America. Note on map that all of South America is east of the eightieth parallel, while nearly all of the United States is west of that parallel. Note how much further south South America is than Africa. Cape Horn is nearly 25 degrees further south than Cape of Good Hope. Note where the equator crosses South America and where it crosses Africa. Note that New York is about two-thirds as far from the mouth of the Amazon as is London. Note that much the larger part of South America is in the torrid zone.

Bounding Waters: Caribbean Sea, Atlantic Ocean, Pacific Ocean. Antarctic Ocean lies to the southward, but can scarcely be called a boundary.

Comparative Area: Not quite so large as North America, but twice as large as Europe. Ranks fourth among the grand divisions in area. Great amount of uninhabitable land because of tropical jungles, lofty mountains and deserts.

Structure: Triangular, long from north to south. The great highland is near the western side, extending in an unbroken range the entire length of the continent, a distance of nearly five thousand miles. The secondary highland is in eastern Brazil, while another elevated region lies at the north. These three highlands form the skeleton of South America and give it its shape. North of the centre lies the enormous Amazon plain, south of the centre is the great plain of the Plata system. The Andes are not a single range, but a system of many parallel ranges, with the greatest width in Bolivia.

Wind Belts and Climate: South America is one of the best suited of the grand divisions for teaching the wind belts. Near the equator is the belt of calms with its rising air and heavy rainfall. North and south of this are the trade wind belts, with the winds blowing pretty steadily from the northeast and southeast, laden with moisture which they have taken up in their journey

*Continued from March, 1908, MONOGRAPHS.

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over the Atlantic. This moisture they drop freely on the windward slopes of the mountains, especially of the lofty Andes. These pouring rains upon the eastern slope of the Andes feed the head waters of the mighty Amazon system.

Near the tropic of Capricorn is the horse latitude belt of downward moving air, a belt of light rainfall and, in the high plateau of the Andes, a desert. Still further south is the belt of the prevailing westerlies Here the western slopes of the Andes receive the rain and the Pampas of southern Argentina is a dry region, nearly desert.

The mountains and the wind belts are the key to the rainfall of South America.

Since so much of the continent is in the torrid zone the larger part is hot. The lowlands of Brazil and neighboring countries are hot, damp and unhealthy. In many places white men cannot reside because of fevers. However, even in the torrid zone the plateaus of the Andes are so lofty that a most delightful climate is found. The city of Quito, nearly on the equator, is so high that the climate is like perpetual spring. Argentina and Chili have a temperate climate.

Coast Line: Exceedingly regular. Not many good harbors in proportion to the length of the coast.

Mountains and Plateaus: The Andes are a long but relatively narrow system, being a continuation of the system that extends from Alaska to Panama in North America. The Andes form one of the lofty mountain systems of the world, excelled by the Himalayas of Asia alone. There are a half dozen peaks that are nearly or quite four miles high. The highest has only recently been scaled. Many of the highest peaks are volcanoes. The Andes are widest in Bolivia. Here the plateau itself is over 12,000 feet high and upon it stand towering peaks that rise 8.000 or 10,000 feet higher. Even the lowest passes through the Andes are thousands of feet above sea level. Only one railroad has attempted to get across, one from Argentina to Chili. Notice on the map how near to the western side of South America the great rivers rise.

Eastern and southeastern Brazil is a plateau with relatively low mountains. It is not necessary to learn the names of these mountains. There is another highland in the north. These three highlands give the continent its triangular shape and determine where the main river systems shall be.

Rivers and River Basins: There are three large systems of rivers. The Amazon is the greatest in the world. Not so long as the Mississippi-Missouri or the Nile, but is wider and deeper and discharges more water than any other river. Steamers ascend the river over 2,000 miles. In places it is several miles wide. In the rainy season it overflows its low banks and transforms the plain into a vast swamp. The slope of the river is slight and hence its current is slow. It carries a great amount of yellow mud which discolors the ocean for five or six hundred miles from the mouth. The rainfall in the Amazon Valley is heavy. Why? The climate very hot. Why? The great plains of the Amazon basin are clad in a forest so dense that it is practically impenetrable except along the river courses. These forest covered plains are called *selvas.* They are practically an unknown wilderness except along the

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navigable rivers. White men avoid them. Indians live in places. The Amazon drains an area only one-sixth smaller than the entire United States. The Parana-Plata system drains about half the area of Amazon basin. The Parana is an enormous river, much larger and longer than any in Europe. The Plata is the broad estuary formed by the junction of the Parana and the Uruguay. The broad plains of southern Brazil, drained by the Parana and its branches, are not as a rule forest covered, but are clothed in grass and are called *campos*. They are great pasture lands. In Argentine these grassy plains are called *pampas*. In Venezuela is the Orinoco system, whose broad, grass covered plains are called *llanos*. Forests cannot survive the drought which occurs in the dry season.

Why are all of the Pacific slope rivers short? Are there many rivers on the Pacific slope? Reason? The inner part of the plateau of Bolivia is so enclosed by mountains that the drainage is into lakes in the centre. Why is the rainfall light on this high plateau?

Forests: The forests of the Amazon are the most dense in the world. Valuable cabinet woods and dye wood and the rubber tree are the most important to commerce.

History and People: With the exception of Brazil, the present countries of South America were formerly under the control of Spain. The Spanish treated these colonies so badly that they all revolted in the early part of the nineteenth century and established independent governments. Brazil also revolted from Portuguese control. Now the Guianas are the only parts of South America under European control. All of the other countries are republics, having a form of government considerably like our own, but in many of the republics revolutions are so frequent that conditions are badly upset. This instability of government is one of the greatest obstacles to the progress of the smaller countries. Argentina, Brazil and Chili are better in this respect. Perhaps the large number of Europeans in these countries has favored greater stability of governments.

In the region which is now Peru and Bolivia the Spaniards found a large tribe of Indians called the "Incas," who were quite well advanced in civilization. Most of the Indians of South America were and still are docile and unprogressive. The Spaniards in many cases intermarried with the Indians and a large number of the people are now of mixed blood. The Roman Catholic religion prevails generally.

Wild Animals: In the tropical forests are beautiful birds of great variety, the fruit-eating monkey, the fierce jaguar, the sloth, many reptiles and huge serpents, the ant eater, tapir and armadillo, the American ostrich or rhea, the llama, sometimes called the camel of the Andes, and the condor, largest of flying birds, are charactertistic of South America.

The Leading Nations: While Brazil is much the largest of South American countries, most people regard Argentina as the leading nation. Chili is also a progressive country. These three deserve more individual emphasis. The Andes, the lack of railways, the poor governments in some countries, the large proportion of Indians and the general undeveloped condition of the

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resources all act as a retarding influence upon trade. The great items of export are rubber from the tropical forests, coffee from Brazil, cacao from the northwestern countries, wheat from Argentina and Chili, cattle and sheep products from campos and pampas and valuable metals from the Andes.

The lack of coal and the lack of the necessary capital and mechanical training results in a general absence of manufacturing. The imports are practically all manufactured goods, brought more largely from England and Germany than from the United States. There are far better and more frequent steamers between South American ports and Europe than between those ports and the United States. Passengers from South America to the United States often go by way of Europe. The opening of the Panama Canal will stimulate our trade with the Pacific countries of South America.

Chief Needs: European immigration (which is going on rapidly to Argentina and Brazil in particular), fewer revolutions and more stable governments, capital to invest in railways, mining and manufacturing, better educational advantages and technical schools, less of politics and more of industry among the upper classes.

Fifteenth Week.

The Northern Countries of South America.

COLOMBIA.

Touched by Venezuela, Brazil, Ecuador, Panama, the Caribbean Sea and the Pacific Ocean. It is more than twice as large as Germany, three times the size of Japan. Nearly all in latitude 0 to 10° north. Lowlands are almost unendurably hot for any persons except natives. One-half of the area is a high plateau. Most of the white people live in the highlands, where the climate is agreeable. Bogota, the capital, is far inland and is 9,000 feet above the sea. The larger part of the country is very thinly populated by white people. Colombia has yielded a great deal of gold in the past and is still an important producer of precious metals. Almost every kind of climate is found as we ascend from the low hot plains to the high plateau and still higher to the mountain peaks. Almost every crop can be raised somewhere. Coffee is the chief agricultural export. Rubber and cacao are also sold in considerable quantities.

VENEZUELA.

Both Colombia and Venezuela are larger than people generally suppose. The latter is six times as large as New York State and much larger than Germany or France. It is touched by Colombia, Brazil and British Guiana. There are extensive treeless plains called llanos, the seat of extensive cattle raising. Other parts are densely forested and produce rubber and valuable woods. Cacao and coffee are among the leading exports. The country is bady governed and revolutions are frequent. The foreign trade is small. Caracas is the capital.

The Guianas: Guiana is composed of three colonies belonging to England, France and Holland. They are of no great importance and do not need any special emphasis. Of course, the climate of all of these tropical countries is hot and oppressive except when offset by high altitude.

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Sixteenth Week.

BRAZIL.

Location, Boundaries, Area: It occupies a large part of the northeastern portion of the continent. Nearly all in the torrid zone. The equator crosses Brazil in the northern part. The mouth of the Amazon is in latitude 0°. All of the countries of South America except Chili touch Brazil. Note on map that Brazil is all east of the meridian of New York. It is one of the largest countries in the world. About the size of the United States.

Physiography, Drainage, Climate: The largest part is a vast forest covered plain, sweltering hot, unhealthy, with very heavy rainfall. Thousands of square miles have never been touched by the foot of a white man.

This great plain, called the selvas, is drained by the Amazon and its many branches.

The western and southwestern part is a plateau with mountains of moderate elevation. The nearness of these mountains to the coast makes the shore line rather even, with only a few good harbors.

Note.—It is suggested that a description of the tropical jungle be read or given by the teacher. Carpenter's Geographical Reader, "South America," might be used for the purpose.

About the only means of travel in the great Amazon basin is by boats on the rivers. Many of the rivers are of great size, but their names need not be learned. The climate south of the tropic of Capricorn is not so hot and is the most progressive part of Brazil.

Products: Coffee is the greatest of the products. Brazil supplies over half of the world's coffee. This is nearly all produced in a comparatively small area in the southeastern part near Rio de Janeiro and Campos.

A coffee plantation may cover thousands of acres. The coffee trees need to be shaded by higher trees to produce well. The tree produces after it is four years old. The coffee berries are picked in April or May and a good tree yields about four pounds a year. This is an enormous industry and one of the chief sources of wealth. Rubber from the Amazon forests is the other great Brazilian product. Brazil nuts, valuable cabinet woods, cacao and some cotton are productions worthy of mention.

Note.—A lesson on the rubber industry and one on the coffee industry are recommended. Carpenter's Reader, "South America," will furnish the material.

Cities and Foreign Trade: Rio de Janeiro is the capital and largest city. It has an excellent harbor and is a very beautiful city.

Para, near the mouth of the Amazon, is the great rubber exporting city. Pernambuco, Bahia and Campos are busy ports.

Brazil does a large export trade. The United States buys most of its coffee from Brazil. The rubber goes to the United States and to Europe. The steamship connections with Europe are better than with the United States. Not much manufacturing is done and hence the imports are largely manufactured goods of all kinds. The United States does not supply as large a part of these as it ought.

People, Government, etc.: The entire population of Brazil does not

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equal that of New York and Pennsylvania. The white people live along the coast or in the southern part. They are of Portuguese descent and speak that language. Brazil changed from a monarchy to a republic in 1889. Its government is among the best in South America. The Roman Catholic religion prevails. Many Germans and some other Europeans are settling in Brazil and are adding to the prosperity of the republic. Brazil is rich in resources and ought to become a great nation.

URUGUAY.

This is the smallest of South American countries. The leading industry is the raising of cattle and sheep. These roam in great numbers over the grassy, rolling plains. Montevideo, the capital, is the only important city.

PARAGUAY.

This small country is also devoted quite largely to stock raising, on account of the extensive grass lands that constitute most of the country. It is said to be about the only country in the world where oranges grow wild. They are so common that they are used for feeding to hogs. Asuncion is the capital.

Seventeenth and Eighteenth Weeks.

ARGENTINA AND THE ANDEAN COUNTRIES.

ARGENTINA.

Locations, boundaries, size: Almost wholly in the south temperate zone, occupying the same latitude south of the equator that the United States does north. It is separated from Chile, along its western boundary of two thousand miles, by the towering range of the Andes. It touches Brazil, Bolivia, and the small countries, Uruguay and Paraguay. It has a long coast line on the Atlantic. Argentina is a large country and is capable of supporting a vast population. It is about as large as our Mississippi Valley States taken together and has climate, soil and surface much like those States; it is a vast rolling plain, mostly free of forests.

Cities: Only one city need be remembered, Buenos Aires, the largest city south of the equator in any part of the world. It has an excellent location on the deep, broad Plata River. It has grown almost as rapidly as our large cities in the United States. It is the ocean terminus of the most extensive railway systems in South America.

Industries and Products: A mild climate, ample rainfall in a large part of the country and a vast extent of level land make Argentina a most favorable country for agriculture. Wheat raising and cattle and sheep ranching are the great industries. In these two lines of industry, Argentina ranks among the important food producing nations. The wheat, beef and mutton go to Europe, especially to the United Kingdom. Nearly all of the agricultural products which are raised in the United States are produced to a greater or lesser extent in Argentina, but few of them enter very largely into her foreign trade. South of the 40th parallel, rainfall is so light that sheep raising is about the important industry. Sheep are able to find a living where cattle can not. Since the meat shipped from Argentina to Europe has to cross the equatorial belt, it has been found best to freeze it and ship it in refrigerator boats. The largest meat refrigerating plant in the world is in Buenos Aires. Wool and hides are also important exports.

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Manufacturing is but little developed. Coal is lacking. The productive lands are well supplied with railroads. Europeans and Americans are doing a great deal in developing Argentina.

People, Government, etc.: While people of Spanish descent are the older inhabitants, a great number of Europeans, especially English, Germans and Italians have gone to Argentina more recently. These people are an important element in the population. Spanish is spoken. The government is well conducted and the republic is making rapid progress. As in all South American countries, the Roman Catholic religion is most general.

CHILE.

This is one of the three leading nations of South America. Note from the map how long and narrow it is. It is long enough to reach from the southern point of Florida across the United States, lower Canada and half way across Hudson Bay. It is mostly in the temperate zone. The northern part is in the torrid zone, in the horse latitude belt, and practically no rain falls there. Here is one of the most complete deserts in the world. It is in this desert region that the great beds of nitrate are found, This nitrate of soda would dissolve and disappear in a rainy country. Peru formerly owned the nitrate beds and got great profit from them. Chile took them in war, and now Chile is getting great sums of money from the sale of the nitrate. Its most important use is as a fertilizer to enrich the soil. The export of nitrate is greater in value than all other Chilean products. Copper is the second in value among the exports. Practically all temperate zone crops are raised. Considerable wheat is exported. The great valley of Chile, lying between the coast range and the Andes, is one of the most fertile valleys in the world. Santiago is the capital and Valparaiso the chief port. Our trade with Chile is not large. Most of the imports are manufactured goods brought from Germany and the United Kingdom. There are many Germans and English in Chile, and their influence helps the progress of Chile.

BOLIVIA.

Having no seacoast and being so largely formed of a lofty plateau, Bolivia has relatively little intercourse with the nations of the world. In the interior of this plateau are two large lakes; one of them, Titicaca, is 12,000 feet above sea level. The entire population is less than half that of New York city. The mountains are rich in minerals, especially in tin, copper and silver.

PERU.

Peru is one of the more enlightened of the Andean republics. The Indians, descendants of the famous Incas, are superior to any others in South America. The mines of the Andes are very rich in silver, gold and copper. As in nearly all South American countries, mining is not carried on in a very scientific way. Some day these mines will be developed and will become immensely valuable. Lima is the capital, and Callao the chief port.

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ECUADOR.

Ecuador is named from the Spanish word meaning "equator." The western part is a lofty plateau, on which is built the capital, Quito, 9,000 feet above the sea. The eastern part is in the great Amazon basin. In Ecuador is every kind of climate from extreme tropical heat, at the sea level, to perpetual winter, on the lofty mountain tops. Quito, nearly on the equator, has a delightful climate. Why? The production of cacao, from which cocoa and chocolate are made, is the leading industry. About one-third of the world's supply comes from Ecuador. Guayaquil is the chief port.

Nineteenth and Twentieth Weeks.

RECAPITULATION AND REVIEW.

1. Name the countries of South America.
2. What ones are most progressive?
3. Why is such a large part of Brazil unexplored?
4. What are the *selvas, llanos, campos, pampas?*
5. Why is the rainfall of the Amazon valley so heavy?
6. Why are the rivers east of the Andes long?
7. Why do most of the people of Brazil live in the southeastern part?
8. How far from its mouth is the Amazon navigable?
9. What is the leading commercial product of the upper Amazon?
10. What part of the world's supply of rubber comes from the Amazon basin?
11. How is rubber obtained? Its chief uses?
12. Compare the area of Brazil with that of the United States.
13. What great disadvantage has Brazil?
14. Where are the coffee plantations of Brazil?
15. What part of the world's coffee do they supply?
16. Name and locate four important ports of Brazil.
17. What is the leading industry of Paraguay and Uruguay? Reason?
18. What is the nature of the surface of Argentina?
19. What are the leading industries of Argentina?
20. What advantages has it over Brazil? Over Chile?
21. What important articles of food are sent from Argentina to Europe? In what condition is most of the meat sent? Why?
22. Name and locate the three great river systems of South America.
23. What language is spoken in Brazil? In the rest of South America? Why is this?
24. What South American countries are receiving a large number of European immigrants? What effect is this having upon these countries?
25. Why is southern Argentina so dry?
26. Why is northern Chile desert? What valuable product comes from this desert? For what is it chiefly used?
27. Name one important export from Chile, from Peru, from Ecuador, from Colombia, from Venezuela.
28. What can you say of the variety of climate in Ecuador and Colombia, and what are the reasons?
29. What are the chief needs of most of the South American republics?

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30. Why do Germany and England have a greater part in the trade of South America than the United States has?

31. Where is Cape Horn? Cape St. Roque? The Strait of Magellan? Buenos Aires? Santiago? Lake Titicaca? Lima? Quito? Volcano Aconcagua? Bogota? Caracas? Montevideo? Valparaiso? Guayaquil? Patagonia?

32. Why do manufactured goods form the chief import of South American countries?

33. Draw a map of South America. Try to sketch in the various countries from memory. Show the three main river systems. Mark the chief rubber producing region, the coffee section of Brazil, the selvas, the pampas, the cities mentioned in Question 31.

34. Describe one or more of the following: A tropical jungle, how rubber is secured, the growing and marketing of coffee, the Incas of Peru.

35. What recent events have called our attention to South America?

Geography—6B

By R. H. WHITBECK.

Twelfth and Thirteenth Weeks.

RUSSIA IN EUROPE.

Location, boundaries, area: It occupies the eastern half of Europe. It is entirely north of the 40th parallel of north latitude, which is about the latitude of New York City. Its boundaries are the Arctic Ocean, White Sea, Norway, Sweden, Gulf of Bothnia, Baltic Sea, Gulf of Finland, Germany, Austria-Hungary, Roumania, Black Sea, Caspian Sea, and Asia. The Ural Mountains and the Ural River are not boundaries, nor are the Caucasus Mountains.

European Russia has over half of the area of Europe, and is two-thirds as large as the United States. Asiatic Russia is over three times as large as European Russia.

Surface: A vast plain, practically none of which rises higher than 1,000 feet.

Climate: Very cold in the north, gradually changing to a dry, warm climate in the southeast. Rainfall in the east and southeast is scarcely sufficient for farming.

Rivers: The Volga is the largest. The Don and the Dnieper need only be mentioned.

Facts for Emphasis:

Russia is the giant of the nations, an immature, undeveloped giant. The Czar rules a sixth of the land area of the globe. Yet little Japan, the Giant Killer, struck the Russian Empire a blow from which it will not recover for a generation. The very hugeness of Russia proved her undoing in the recent war.

The United Kingdom, Germany and France are highly developed. They are in the forefront of all the world's activities. They are great manufacturers, great traders, great maritime powers. Russia, on the contrary, is

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still mediæval. *Nine-tenths of the people are farmers or herdsmen.* Her enormous natural resources are but poorly developed. Her 900 millions of acres of cultivatable soil are untilled or half-tilled by an ignorant peasantry. Her rich mines are producing but a fraction of their possibilities. Roads are poor, railways far apart, manufacturing limited but growing, people uneducated, oppressed, shut off from knowledge of the rest of the world. Russia is more Asiatic than European.

Our interest in the study of Russia does not center around her manufactures or her commerce. She buys little of us, and we little of her. We meet her as a competitor in the wheat markets and petroleum markets of Europe, for her Caspian oil fields are wonderful producers and her production of wheat is the greatest in Europe. In teaching the geography of Russia, the emphasis will properly fall upon such points as these:

1. *The great size and compactness of the empire,* extending as a solid mass nearly half-way around the globe, giving a wonderful range of climate and resources.

2. Great length of coast line, yet *without a single ocean harbor that is not closed with ice in winter,* an insuperable obstacle to the development of Russia. To secure ice-free ports is, and must be, her unremitting aim. Thus far the nations have thwarted her efforts; Japan, most humiliatingly in the late war. Russia's Baltic fleets or Black Sea fleets must pass under the guns of foreign powers on their way to the open ocean.

3. *Her wonderful expansion.* From a small province on the Volga, the Muscovite power has pushed outward, adding tribe after tribe, province after province, for nine hundred years. That expansion has been checked only when the Slav sought an ice-free outlet to the open sea.

4. *The great variety of races,* languages and customs included in the empire. Upwards of forty languages are spoken and many more dialects.

5. *The flatness of the great Eurasian plain,* with few mountain ranges and no real barriers. It is this condition that made it possible to absorb such an enormous area into one nation. Nowhere else in the world could such a large nation exist.

6. *The northerly situation* reduces great stretches to frozen tundra; makes severe winters, and freezes many of the rivers, the chief highways of inland trade. The *continental climate* gives great seasonal extremes. The flatness allows the freezing arctic winds to sweep far south. The great inland area, far removed from the ocean, is chiefly visited by cold or drying winds, which reduce at least a million square miles to desert or arid steppes.

7. *The autocratic government,* the oppressed people, the lack of intercourse with the outer world, the exile system, the spread of nihilism, the present struggle between the people and nobility, call for mention.

Cities:

St. Petersburg, in the northwest, is the capital and metropolis. Its latitude is the same as that of the southern point of Greenland. Half of the foreign commerce of Russia passes through this city.

Moscow is an old city, formerly the capital. It is one of the most important cities of the empire and the chief railroad center. Nearby is the city

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of Nizhni, Novgorod, at which the most famous fairs in the world are held.

Odessa is the second port of Russia. It is the shipping port for the wheat and other products of Southern Russia.

Riga and Warsaw need only be mentioned.

Fourteenth Week.

AUSTRIA-HUNGARY.

Though the second largest country of Europe, Austria-Hungary does not take a large part in the business of the world. *The empire is not unified.* Much jealousy and rivalry exists among the twenty races of people in the country. The Austrians and Hungarians have little sympathy. The empire is moving toward dissolution. Only a few points call for emphasis.

The plain of Hungary is a rich agricultural region, and Austria-Hungary is *an important grain producing country.* The great Danube River and Valley form an excellent route of trade and travel. It is one of Europe's old highways. The mountainous nature of the country leads to many isolated groups of people with scanty intercourse and divided interests. *The provinces around Prague do much manufacturing.* Their products are of excellent quality and approach the French manufactures in artistic design. The lack of easy access to the sea limits foreign trade largely to European nations or compels much of it to pass through their ports on its way to more distant countries. Austria-Hungary occupies a midway position between a great industrial nation like Germany and an agricultural nation like Russia; less advanced than the former, more advanced than the latter. Vienna is one of Europe's most beautiful cities. Some of the Austrian universities are among the foremost in Europe. General education is, however, only moderately diffused. The Bohemian glass factories and the Austrian potteries send us considerable of their artistic wares. Our sales of raw cotton alone to the United Kingdom exceed in value our entire trade with Austria-Hungary. Great numbers of people are emigrating to the United States from parts of this country.

Near Cracow, in the north, are famous salt mines, where the rock salt is 1,200 feet thick and extends through the country for 300 miles. Miles upon miles of galleries have been tunneled through the solid salt. There are villages of people deep down in these mines. Austria-Hungary is rich in minerals. One-third of the world's graphite comes from there. What is graphite used for? In addition to Vienna, Budapest, Prague and Triest may be mentioned.

THE BALKAN STATES.

These are Roumania, Bulgaria, Servia, Turkey, Greece and the little mountain state of Montenegro.

Turkey is the largest. It is a rugged, poorly tilled, poorly governed country. The Turks are Asiatics and Mohammedans, and European nations generally dislike and distrust them. The Asiatic part of the Turkish Empire is much larger than the European. There is little manufacturing and not much foreign trade. Constantinople is a great and famous city and occupies one of the most strategical points in the world. The Sultan of Turkey is an absolute monarch, and his government is a disgrace to civilization.

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Greece was once the most highly civilized nation of the world. Many wonderful ruins, beautiful statues and masterpieces of literature still exist to tell of the splendid civilization of ancient Greece. The modern Greeks are a fairly prosperous and cultivated people. They have a large merchant fleet engaged in the trade of the Mediterranean. On account of the sinking of the land, Greece has a very irregular coast, the longest coast line in proportion to area of any country. Athens, famous Athens, was once the center of Greek culture. It is the present capital. Thousands of travelers visit it yearly on account of its glorious history and to see its ruins.

The other Balkan States are of comparatively little importance in our study. The people are backward and often lawless. They are largely engaged in farming and stock raising. They do not have very close relations with the commercial nations except with those on their borders.

Fifteenth Week.

BELGIUM AND THE NETHERLANDS.

Belgium has an importance out of proportion to its size. *It is a country rich in coal and iron, the basis of the great manufacturing activity,* which gives Belgium the name of "The Workshop of Europe," and causes it to be the *most densely populated country in the world.* While only one-fifth as large as New York State, it has nearly as many people. It is excellently situated to take part in Europe's industrial progress; fatally situated in time of European wars. It has been the marching ground of many armies in many campaigns. It contains the battlefield of Waterloo. Every acre of tillable land is carefully cultivated, yet much food must be imported to feed the people of the many factories and mills. *Belgium is an industrial country* and should on this account be grouped with the United Kingdom, Germany, France and the United States.

Brussels is the capital and metropolis. It is a city of great manufacturing interests. Brussels carpets take their name from this city.

Antwerp is one of the greatest seaports of Europe, in the value of its trade.

THE NETHERLANDS.

A very interesting little country and one that has played a large part in the world's affairs. In the past it was a strong maritime power. It has always been a successful colonizer, and is still *the possessor of colonies sixty times as great in area as the home country.* Her foreign trade is double that of Austria or Russia. Her people are ardent lovers of the liberty which has cost them so much; devoted to their little country, much of which they have, by seven hundred years of labor and vigilance, reclaimed from the sea, and now hold by 1,600 *miles of sea dikes;* industrious, frugal, intelligent; good farmers, good sailors, good fishermen, great merchants; the cleanest people in all the world. Their low, flat lands are covered with a *network of canals* which drain the land and often answer for highways. Above the plain rises a *forest of windmills,* driven by the rather constant westerlies, pumping the water from the drainage canals and doing other kinds of work. Holland has splendid *dairies of sleek cows,* whose products

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have given the country the name of *"The Dairy Farm of Europe."* Her colonies in the East Indies, especially the marvelously cultivated island of Java; her former colonies in America, the diamond cutting industry of Amsterdam, and the Peace Congresses which meet at The Hague, are all worth touching upon.

Amsterdam is the constitutional capital of the kingdom, though The Hague is the real seat of government.

Rotterdam is the chief port. It is at the true mouth of the Rhine, and has a very large trade.

Sixteenth Week.

NORWAY, SWEDEN, DENMARK, ICELAND (GREENLAND).

NORWAY.

Until 1905 Norway and Sweden were united under one king. Now each has its own king. The climate is surprisingly mild near the coast, due to the warming effect of the westerlies. The coast is remarkable. The hundreds of fiords reach far back into the land. Thousands of rocky islands fringe the coast. There is little tillable land and the people have been driven to the sea to secure a living. Thus they became the dreaded sea rovers or vikings of the middle ages. The Normans who conquered England descended from the Northmen or Norwegians. These people are still so fond of the sea that they are found on the ships of nearly every nation. Norway has a merchant fleet far out of proportion to the commercial importance of the country. The people are largely fishermen, sailors, lumbermen or farmers.

Christiania is the capital and Bergen the leading fishing port. Hammerfest is north of the Arctic Circle and in summer has seventy days of continuous light.

SWEDEN.

Sweden is much more generally given to agriculture than is Norway. It has more level land. The Swedes are an exceptionally well educated people as a whole; practically everybody has had some schooling. Mining and luumbering are important industries. Swedish iron is the best in the world.

Stockholm, the capital, is a beautiful city, sometimes called the "Venice of the North."

The effect of the warm Atlantic winds is well shown in the climate of Norway and of Sweden. The harbors of Norway are never frozen, while those of Sweden, on the leeward side of the Scandinavian Mountains, are ice-bound for several months each winter.

DENMARK.

Denmark is a part of the great European Plain, with a little more than one-fourth the area of New York State. The population is a little over half that of New York City. There are so many inlets that no part of the mainland is over thirty-five miles from salt water. The mainland is without lakes, rivers or minerals. The people outside of the cities are nearly all engaged in farming or fishing. Dairying is an important phase of farming.

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So many members of the royal family of Denmark are either occupying European thrones or are married into other reigning families that the King of Denmark is called the "Grandfather of Europe." Half of the population live on the islands.

Copenhagen is the capital and chief city. Almost the whole export trade is in provisions raised on the little farms. Manufactured goods are the chief imports.

GREENLAND AND ICELAND.

Greenland and Iceland are under the control of Denmark. The former is either a very large island, or a group of islands so buried under snow and ice that they seem to be a single island. The ice cap of Greenland is a thousand feet thick in places and is slowly creeping outward from the center, forming glaciers. About the only inhabitants are Eskimos, who live, for the most part, by seal, whale and walrus fishing.

Iceland receives enough heat from the winds that have blown over the North Atlantic Drift to make the southern part of the island a fairly comfortable place to live. There are over a hundred volcanoes on the island, many of which have been active in historic times. Mt. Hecla is the most noted. Iceland is more than twice the size of Denmark.

Seventeenth and Eighteenth Weeks.

ITALY, SPAIN AND PORTUGAL.

ITALY.

This has been one of the most important countries of the world. It was the center of the ancient Roman Empire, the most powerful of all ancient nations. Probably no other country has been so large a factor in history as Italy. At present it is of only moderate importance in the world's affairs. It is shut off on the north by the Alps; but roads, railroads and tunnels unite it to the rest of Europe. Italy is really a spur of mountains, the Apennines, which rise above the Mediterranean. Its delightful climate is due to the tempering influences of the seas which nearly enclose it, and to the great wall of the Alps which protect it from the cold north winds. Though it is in the latitude of our North Atlantic States, yet it has in the south a sub-tropical climate. The most fertile part is the Plain of Lombardy, or Po Valley, built up of the sediments washed from the mountains.

It is densely populated and hundreds of thousands of Italians are emigrating to North and South America yearly. Agriculture is the leading industry. The raising of silk worms and the production of raw silk is a great industry. On the mountain slopes the grape vine is very extensively cultivated, and as a producer of wine Italy is second only to France. It is the chief olive producing country of Europe. The lack of coal retards the development of manufacturing. Five-sixths of the world's supply of sulphur comes from Italy (Sicily).

Italy has many famous cities. Rome, on the Tiber, the most famous of the world's cities, is still the capital and is the center of the Roman Catholic religion. Here is the greatest of cathedrals, St. Paul's, and the Vatican, the wonderful palace of the Popes, said to contain eleven thousand chambers. Here, too, are many ancient ruins that tell of the greatness of ancient Rome.

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Venice is called the Queen of the Adriatic. It is built on a hundred islands, which are joined by four hundred bridges. The streets are canals and the carriages are boats. It was once a powerful independent city, and controlled a large part of Europe's trade with the East. It contains buildings of wondrous beauty, among them the Cathedral of St. Mark's.

Naples, on its beautiful bay, near which is the famous volcano of Vesuvius, is another noted city.

Milan is one of the leading business cities of Italy and has the superb white marble cathedral, famed over all the world.

Genoa was once a powerful city. It is still a beautiful one. Columbus was a Genoese.

Florence is celebrated for its art treasures.

Note.—If time allows, the teacher may very properly give more attention to Italian cities than is here suggested.

SPAIN.

This was once the rival of the strongest nations of Europe. Her colonies occupied a large part of the New World, and she held many of the islands of the sea, including the Philippines, Cuba and Porto Rico. She had a powerful navy and her generals, admirals and statesmen were among the foremost of the world. Little by little her power has waned, her colonies have revolted and now Spain is one of the weak nations.

The country is a plateau, with many mountain ranges rich in minerals. The interior is dry and often nearly barren. The best parts of the country are near the coast, especially on the Mediterranean side. Nearly all of the larger cities, except Madrid, the capital, are near the coast. The people are backward and have limited opportunities for education. All industries are carried on in a lax way. Agriculture is the chief industry. Mining is important. Copper and quicksilver are mined in large quantities. Iron ore is sent to England. Olives, grapes, oranges, lemons and other sub-tropical fruits are an important export. Manufactures are backward.

The chief cities are Madrid, the capital; Barcelona, the largest city and chief port; Granada, the site of the famous Alhambra, a palace of the Moorish kings; Seville, and Malaga.

Much of the cork which we use comes from the bark of the cork oak of southern Spain.

PORTUGAL.

This was once a leading maritime nation. It is now of small importance. The people are very illiterate, 80 per cent. of them being unable to read or write. All industries are in a backward state. The chief cities are Lisbon, the capital, and Oporto.

Nineteenth and Twentieth Weeks.

RECAPITULATION.

1. Name the five great powers of Europe.
2. Why has western Europe such a mild climate?
3. What parts of North America are in the same latitude as (a) England? (b) Norway? (c) Germany? (d) Italy?
4. Why is the rainfall of eastern Russia so light?

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5. Name and locate ten rivers of Europe.

6. Give reasons for the great development of manufacturing in England.

7. Name three other European countries that are large manufacturers.

8. Does any European country equal the United States in extent of manufacturing? (No.)

9. How does the foreign trade of the United Kingdom compare with ours? (Greater.)

10. What country of Europe is progressing most rapidly in manufacturing? (Germany.)

11. What are the chief mountain ranges?

12. What ranges are boundaries between nations?

13. Why are there so many lakes in northern Europe?

14. Why is the Norwegian coast so irregular?

15. Give the capitals and form of government of the leading nations.

16. What countries are of considerably less importance now than formerly?

17. What European countries are our best customers?

18. Where is the great plain of Europe?

19. What countries have the best systems of education?

20. If you were a great merchant and dealt in all commodities, where in Europe would you expect to buy cork, raw silk, silk goods, olives, wine, woolen goods, sulphur, oranges, wheat, rye, beet sugar, artistic pottery, cotton manufactures, copper, steel manufactures, lumber, potatoes, linen, toys, dairy products?

21. If you had great wealth and could travel wherever you wished, where in Europe would you go to see glaciers, ruins of ancient buildings, great cathedrals, extensive vineyards, great silk mills, the best army, the greatest navy, the strongest fortress in Europe, volcanoes, fiords, beautiful lakes, the Alhambra, the Vatican, Westminster Abbey, the greatest shipbuilding yards in the world?

22. What and where is each of the following: Thames, Adriatic, Clyde, Naples, Volga, Blanc, Po, Genoa, Cheviot, Seine, Dover, Bosporus, Danube, Geneva, Moscow, Ægean, Vesuvius, Sardinia, Waterloo, Rhine, Simplon, Sicily, Man, Baltic, Dardenelles?

23. Arrange the following cities in order of their latitude, placing the most northerly first: Paris, London, Rome, St. Petersburg, Athens, Hammerfest.

24. Why has Italy such a mild climate?

25. What advantage for European trade has Germany over England?

26. What are some of the most important things which England buys from us? France? Germany?

27. Is any European country as large as the United States? (No.) Has any as large a population? (Yes, Russia.)

28. What European countries are densely populated?

29. Why is the North Sea so much warmer than the Baltic in winter?

30. Write a list of as many European cities as you can, naming the country in which each is and telling whether or not it is a seaport.

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CONCLUSION.

Nearly every country of Europe has a marked individuality; a rather distinct character which causes it to differ from other countries. Each of the leading countries stands definitely for something; the United Kingdom, for example, stands for manufacturing, trade, great merchant fleet, great navy, great colonial empire; France means artistic goods, devotion to the beautiful, silk manufacture and wine production. This matter of national individuality should be emphasized.

To teach long lists of productions, exports, imports, etc., for each country is folly. Whether or not a country is a large food producer, or food buyer; a manufacturer, or buyer of manufactures; a progressive, or a declining nation; what its people are most largely engaged in, why, and how well they do it; what are the most pronounced geographical influences which affect the country; what the nature of our commercial and other relations with it—these matters call for emphasis. If the country is relatively unimportant, pass it quickly. Topical outlines are good if they are flexible. Bookish details about cities are unprofitable. Perhaps twenty-five cities of Europe call for some individual treatment; generally it is sufficient to point out a city's distinctive character; as, for example, Lyons, the silk city; Hamburg, the leading port of Germany and of continental Europe. A few will call for a little more detail, but there is danger of teaching too much. The names of perhaps thirty or forty other European cities should be familiar to the pupil. As a rule, to know simply in what country these are situated is enough. The bounding waters, a half dozen mountain chains, a dozen important rivers, the frequently-mentioned islands or groups of islands ought to be definitely known. Beware of long lists. Remember that there are two very distinct groups of facts to be taught: (1) Those that are worth knowing and worth remembering; fundamental, significant, illuminating facts—a relatively small portion of the whole. (2) Those that are worth touching upon, but not worth drilling or reviewing. It is an important matter in efficient geography instruction that the teacher be pretty clear in her own mind what facts belong to the first group and what ones fall in the second. Emphasize the fundamental facts; make them stand out as headlines. Touch lightly upon the incidental. Don't neglect map studies, nor casual relations where they are clear and definite, nor frequent comparisons.

Geography—7A*

By MARY WOODLOCK.

Climate.

Owing to the extent of the United States it has great diversity of climate. Climate is affected by latitude, elevation, proximity to the ocean, prevailing winds. As a general rule the lowlands of any country are warmer than the highlands; also land near the ocean has a more equable climate than land surrounded by other land masses. Because land absorbs

**Continued from March,* 1908, MONOGRAPHS.

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and gives out heat more quickly than water does, places in the interior of the United States are warmer in summer and colder in winter than places in the same latitude situated on the coast.

Winds are important as carriers of moisture and modifiers of temperature. On the Pacific coast the prevailing winds blow from the ocean; hence they are moisture-laden. But the low temperature of the highland forces the moisture to the earth as rain, and the winds reach the central plain as dry winds. The Great Central Plain would be an arid region were it not for the moisture-laden winds received from the Gulf of Mexico and the Atlantic.

If the Appalachian Highland were as high as the Pacific Highland how would it affect the climate of the Great Central Plain?

Texas, New Mexico, Arizona, and the Mohave Desert, in California, lie in a region of little wind, so they receive very little rain and have large tracts of arid land.

In the East the winds are variable, but they blow from the Atlantic and the Gulf of Mexico with sufficient frequency to ensure a heavy annual rainfall.

Map: Outline the United States. Indicate the arid regions, the fertile regions.

Forest denudation, or the wasteful cutting of our forests, lessens the water supply and thus indirectly reduces the rainfall and affects the climate. Forests act as storehouses of water by absorbing much of the rainfall. Part of the moisture thus absorbed makes its way slowly through the adjacent soil, some to reach the rivers eventually, and some to return to the air in the form of vapor. Highland forests also serve to bind the soil together. A steep hillside that has been denuded of trees will have much of its soil swept down to the valley with every rainstorm.

In a well forested region the spring freshets—the swelling of the streams caused by the melting snows—have no terrors for the farmer of the plains. The river that waters his fields will not overflow its banks. The forest will absorb much of the melting snows, sending the water gradually on its way.

In the de-forested region, on the contrary, where the lumberman has wielded his axe not wisely but to well, there is nothing to restrain the extra water. It dashes down the hillsides, and, its volume swelled by every additional stream, reaches the valleys and goes on its way through farms, towns and cities, an instrument of destruction.

In the Pacific Highlands, where forests have been destroyed, and in regions where the steep slopes of the mountains afford little hold for vegetation, the watercourses are raging torrents for a few weeks in the spring and beds of dry sand for the rest of the year.

We need the lumber, of course. Forests must be cut; but it is possible to cut them with such regard for the young trees that cutting does not mean destruction. The Federal Government and some of the States have set aside forest reserves, that the supply may not be exhausted. New York State has also established a College of Forestry at Cornell University, Ithaca, to diffuse knowledge of the best methods of forest preservation.

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Irrigation.

The Federal Government is converting arid, into fertile tracts of land in the West by means of irrigation. Irrigation is the artificial watering of land. It is the turning of water from a place where it is useless to a place where it is needed. Or, it is the saving of the superfluity of water supplied by one season for use during a period of scarcity in another season. In Utah, Colorado, Arizona and California the arid regions receive water from the mountain streams. The water is carried in canals or tunnels through projecting rock masses, across valleys, sometimes for many miles. It is distributed to the farms or orchards through a network of smaller canals or ditches that connect with the main. In some places the water supply is obtained by enclosing in reservoirs or behind dams the superfluous water that the melting snows send down in the spring. This water is carried and distributed in the same awy as the water from the streams.

Resources.

Areas of agricultural products: Corn is raised in the north and south Atlantic, and in most of the north and south central States. The area of greatest corn production is included in the States of Iowa, Illinois, Missouri, Texas and Nebraska.

Some *wheat* is raised in the north Atlantic States, but the great wheat-raising region is the north central group. Minnesota, Kansas and North Dakota are the principal wheat States. Duluth, Minn., on Lake Superior, and Chicago, Ill., on Lake Michigan, are the principal wheat markets.

Wheat is exported from New York, N. Y.; New Orleans, La.; Galveston, Tex.; San Francisco, Cal.; Baltimore, Md.

Cotton is raised in the south central and south Atlantic States. The best variety is the "sea island cotton," grown on the islands bordering the coast of South Carolina, Georgia and Florida. Texas, Mississippi, Georgia, Alabama and South Carolina are the leading cotton States. The following cities are noted cotton markets: New Orleans, La.; Galveston and Houston, Tex.; Memphis, Tenn.; Charleston, S. C., and Savannah, Ga.

The only State producing *sugar* cane in quantities is Louisiana. Florida, Alabama and Mississippi produce some sugar cane, and a few Northern States produce beet sugar.

Most of the sugar used in the United States is imported raw and is refined, or made ready for use, in the refineries of Brooklyn, N. Y.; Jersey City, N. J.; Philadelphia, Penn.; New Orleans, La.; and San Francisco, Cal. Much of the imported sugar comes from Hawaii, the Philippines and Porto Rico.

The Virginias, North Carolina, Kentucky and the valley of the Connecticut produce *tobacco*. Virginia is the leading tobacco State, and Richmond, Va., one of the greatest tobacco markets of the world.

The principal *forest* region includes the north and south Atlantic States, some of the north and south central States and the States bordering the Pacific. The Northern forests are of pine, spruce, maple and hemlock. The Southern forests produce cypress, cedar and gum. Oak and walnut are found in the center of the forest belt and fir and redwood in the Pacific

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States. Charleston, S. C.; Savannah, Ga., and Mobile, Ala., are Southern shipping ports for lumber. Duluth, Minn., and Superior Wis., are Northern lumber ports.

Map: United States; indicate the chief wheat region, the chief cotton region.

Mineral Resources.

New York is the principal *salt* producing State. Syracuse, N. Y., is the center. Michigan, Kansas and Ohio also are salt producers. Salt is used in making many chemicals, packing meat, curing hides, etc., as well as in cooking. In Massachusetts and California salt is obtained by evaporation of the sea water in lagoons.

The Appalachian Highlands is a storehouse of *coal, iron, oil* and *gas.* The coal is of two kinds: bituminous and anthracite. Pittsburg, Penn., is the center of the soft coal mines and Wilkes-Barré and Scranton, Penn., are hard coal centers. Pennsylvania, Illinois, Ohio and West Virginia are the important coal States.

Oil and *gas* are usually found together. The principal deposits are in Pennsylvania, West Virginia and Ohio. The oil is carried through pipe lines from the wells to the refineries. Bradford and Oil City, Penn., and Olean, N. Y., are centers of distribution.

Iron is produced in Minnesota, Michigan, Alabama, Virginia and Pennsylvania. Duluth, Minn., and Superior, Wis., are the principal shipping centers.

The States included in the Pacific Highland contain *gold, silver* and *copper.* Copper is also produced in large quantities in the vicinity of Lake Superior. Montana, Arizona and New Mexico are the leading States. Butte, Mont., is the center of greatest production.

The first *gold* discovered in the Pacific Highlands was found in the Sierra Nevada mountains in California in 1848. Colorado now produces the most gold; California, South Dakota, Montana and Nevada follow in the order named. Cripple Creek, Col., is a famous gold center, and Denver and Pueblo, Col., are smelting cities.

Silver is found chiefly in Colorado, Montana and Utah.

Map: United States, showing the areas of greatest production of coal, gold, copper.

Fisheries.

The Atlantic Ocean is richer in edible fish than any other ocean. Along the coasts of the north and south Atlantic States there are innumerable fishing towns. Maine and Massachusetts are the foremost of the Atlantic fishing States, with Delaware and Maryland next in importance. Gloucester, Mass., is the most important fish market. Bluefish are taken all along the Atlantic coast; mackerel, from New Jersey to Maine; herring and cod, off the coast of Maine; lobsters, from Maine to Massachusetts; clams, on Rhode Island, and Long Island, N. Y.; oysters, in the Connecticut River, Delaware Bay, Chesapeake Bay and along the Gulf coast. Sponges are found along the coast of Florida; Key West is the center of the sponge trade.

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GREAT LAKES.

Sturgeon, whitefish and lake trout formerly abounded in the Great Lakes, but constant fishing so depleted their numbers that the Federal Government placed certain restrictions on the fishermen and established fish hatcheries at Duluth, Minn., to prevent extermination.

PACIFIC COAST.

Herring and bass are found off the coasts of California and Oregon. The principal fishing grounds of the Pacific coast are at the mouth of the Columbia River, where salmon are taken in enormous quantities. Whaling ships go out from San Francisco.

Water Power.

The United States, with its widespread and far-reaching river systems, has a most valuable resource in its water power. The early New England settlers, to whom the wonders of steam were yet unknown, harnessed their waterfalls and set them to work at various manufactures. The impetus thus given to manufacturing in the North kept that section in the lead in the production of cotton, woollens, leather and the smaller metal goods even after steam distanced water power as an essential in manufacturing. (Review the cities of the Fall Line.) The Falls of St. Anthony, on the upper Mississippi, determined the location and the leading industry of the city of Minneapolis, Minn. The surrounding States produced wheat in quantities, and the Falls supplied the power to convert it into flour. The Pillsbury mills, in Minneapolis, are the largest flour mills in the world.

In more recent years the field of water power has been widened through its use in operating dynamos. The electric energy thus generated may be transmitted by means of copper wires for use in places many miles from its source. Buffalo, N. Y., gets a great deal of its lighting power and most of its motive power from Niagara Falls, about twenty miles from the city. Los Angeles, Cal., uses electricity supplied by water power eighty miles away. The future holds still greater developments in the uses of water power in connection with electricity.

Great Industries.

The approximate location of some of the principal industries is as follows:

Manufacturing: North Atlantic States, Ohio, Illinois, Michigan, Indiana.

Mining: the States of the Pacific Highland, the Appalachian Highland south of New York, and the region near Lake Superior.

Farming: all the States, but particularly the south Atlantic, south central, and the States bordering the Mississippi.

Cattle-raising: the States immediately east of the Rocky Mountains.

Commerce: all the States. Principal commercial centers: New York, N. Y.; Boston, Mass.; Philadelphia, Penn.; Baltimore, Md.; Chicago, Ill.; Pittsburg, Penn.; New Orleans, La.; Galveston, Tex.; San Francisco, Cal.

Professional pursuits, including all those which emphasize mental rather than manual labor, are followed by a small proportion of the popula-

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tion in all the States. As it becomes more generally recognized that knowledge of the *how* is intensified by acquaintance with the *why*, technical schools will multiply and raise to the height of professions many occupations now spoken of as trades.

Manufacturing.

The United States is the foremost manufacturing country in the world. This is owing to its abundance of fuel, water power and raw material, and also to the inventive genius which has produced many labor saving and time shortening devices.

The United States leads the world in the making of machinery. The product is of two classes: the making of small parts that may be used in putting together different kinds of machines, such as sewing machines, bicycles, firearms; and the making of machines to turn out a finished article automatically.

Important Cities and Centers of Industries.

(Review areas of natural resources.)

Most of the textiles are manufactured in the north Atlantic States, but the South is rapidly building up extensive cotton manufactures. Fall River, Mass., is the most important cotton goods city. Philadelphia, Penn., is the center for woollen goods and carpets; Paterson, N. J., for silk. Glens Falls, N. Y., and Holyoke, Mass., produce paper; Lynn, Mass., shoes. Connecticut deals in small metal manufactures; Waterbury and New Haven, Conn., produce watches, clocks and jewelry; Meriden, Conn., silverware; Bridgeport, Conn., sewing machines. Springfield, Mass., manufactures firearms and bicycles. Albany and Troy, N. Y., make stoves. The larger iron and steel products of the country are locomotives, ships, agricultural machinery, and cars of verious kinds. There are locomotive works at Philadelphia, Penn.; Paterson, N. J.; Schenectady and Dunkirk, N. Y.; Pittsburg, Penn. Shipbuilding is carried on at Philadelphia, Penn.; San Francisco, Cal.; Newport News, Va., and Bath, Me. Agricultural machinery is made in many cities, among them the following: Cleveland, Ohio; Buffalo, N. Y.; Chicago, Ill.; Birmingham, Ala.; Pittsburg, Penn. Chicago, Ill., makes railway and street cars, as also does St. Louis, Mo.

Wood products, particularly furniture, are turned out in all the large cities. New York, N. Y.; Chicago, Ill.; Philadelphia, Penn., and Grand Rapids, Mich., are centers.

Meat products: Chicago, Ill.; Kansas City, Mo.; South Omaha, Neb.; Indianapolis, Ind.; St. Louis, Mo.

Flour: Minneapolis, Minn.; Milwaukee, Wis., and Rochester, N. Y.

Tobacco manufactures: Richmond, Va.; Key West and Tampa, Fla.; Louisville, Ky., and St. Louis, Mo.

Transportation.

Inland transportation in the United States has been greatly developed. Its natural advantages are many and they have been added to by the care and the ingenuity of the inhabitants. The rivers measured in straight lines afford about 14,000 miles of navigation. Connections have been made by

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means of canals at important points, and the Federal government appropriates money every year to be used in keeping the rivers clear by dredging, widening, strengthening channels, etc. The Mississippi system is of course the most important. The Mississippi is navigable from New Orleans (La.), to Minneapolis (Minn.). The Missouri is navigable to Great Falls (Mon.). The Ohio is navigable to Pittsburg (Penn). The Red and the Arkansas are each navigable for hundreds of miles above their meeting with the main stream. The rivers of the east coast are not navigable for long distances, owing to the steep descent to the coastal plain afforded by the Fall Line.

Canals.

The Erie Canal, opened in 1825, through the efforts of De Witt Clinton, affords a waterway from Lake Erie to the Hudson River. It is at present being deepened and its course slightly changed, to accommodate larger ships.

The Champlain Canal connects the Erie Canal with Lake Champlain and thus opens the way through the Richelieu to the St. Lawrence River.

The Chicago Drainage and Ship Canal connects Lake Michigan with the Illinois River.

Railroads.

The States east of the Mississippi present a network of railways. This is owing to the congestion of population in the East, and to the fact that the East being the manufacturing section there is a constant movement of raw materials and of finished articles, near commercial centers, and toward its ports.

Some of the principal railroads of the East are:

Baltimore & Ohio, Philadelphia (Penn.), Baltimore (Md.), Cincinnati (O.), St. Louis (Mo.).

Pennsylvania Railroad, Philadelphia, Harrisburg, and Pittsburg (Penn.), Columbus (O.), Indianapolis (Ind.), St. Louis (Mo.). These roads send branches to New York City.

New York Central, New York City, Albany (N. Y.), Hudson-Mohawk Valley to Buffalo (N. Y.), Chicago (Ill.).

Illinois Central, Chicago (Ill.), Memphis (Tenn.), New Orleans (La.).

Roads Running to the Pacific.

Great Northern, St. Paul (Minn.), Seattle (Wash.).

Northern Pacific, St. Paul, Duluth (Minn.), Tacoma, Seattle (Wash.).

Atchison, Topeka & Santa Fé, Kansas City to San Francisco (Cal.).

Southern Pacific, New Orleans (La.), Galveston (Tex.), Los Angeles, San Francisco (Cal.).

Union & Central Pacific, Omaha (Neb.), Tacoma (Wash.), San Francisco (Cal.).

Map. Outline the United States. Indicate three railroad routes from New York City to Pacific coast cities.

Steamship Lines, Coastal:

Mallory Lines, New York City, Mobile (Ala.), Galveston (Tex.).

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Clyde Steamship Co., New York City, Charleston (S. C.), Jacksonville (Fla.).

Old Dominion Line, New York City, Norfolk, Old Point Comfort and Newport News (Va.).

Fall River Line, New York City, Fall River (Mass.).

Hudson River Day Line, New York City, Albany.

Lake Steamships.

Goodrich Transit Co., Chicago (Ill.) to ports in Green Bay.

Northern Steamship Co., Buffalo (N Y.) to Duluth (Minn.).

Ocean Steamships.

White Star Line, New York City, Liverpool (England).

Cunard Line, New York City, Liverpool.

Hamburg-American Line, New York, Hamburg (Germany).

Allan Line, Boston (Mass.), Glasgow (Scotland).

American Line, Philadelphia (Penn.), Liverpool.

Japan Mail S. S. Co., Seattle (Wash.), Hong Kong (China).

Pacific Mail S. S. Co., San Francisco (Cal.), Honolulu (H. I.), Yokohama (Japan), Hong Kong (China).

Map: Outline the world. Indicate steamship routes from New York City, Boston (Mass.), San Francisco (Cal.), Seattle (Wash.).

Exports and Imports.

The export and import trade is enormous. Only the leading items of each are given.

Exports.

Raw cotton to Great Britain, Germany, France, Italy, Japan.

Meat and dairy products to Great Britain, Germany, Belgium.

Wheat, corn, flour to Great Britain, Germany, Belgium.

Iron and steel, and iron and steel manufactures to Canada, Australia, Germany, Mexico.

Petroleum to Great Britain, Germany.

Lumber and manufactures of wood to Great Britain, Canada, Germany, West Indies.

Copper and copper manufactures to Netherlands, France, Germany, Great Britain.

Cattle and meat products to Great Britain, West Indies.

Tobacco and manufactures of tobacco to Great Britain, Germany, Italy, France.

Leather and leather goods to Great Britain, Australia, Canada.

It will be seen from the above that Europe is our best customer and that our exports to Great Britain are the most important.

Imports.

Silk and silk manufactures from Japan, China, Italy, France.

Sugar from Cuba, Hawaii, Philippines, East Indies, Germany.

Coffee from Brazil, Central America, East Indies, Mexico, West Indies.

Chemicals and drugs from Germany, East Indies, Great Britain.

Hides and skins from South America, East Indies, Great Britain.

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Cotton goods from Great Britain, Germany, Switzerland, France.

Wool and woolen goods from Great Britain, Germany, France, South America.

Rubber and gutta-percha from Brazil, Great Britain, Germany.

Vegetable fibres from Mexico, Philippines, East Indies.

Iron and steel and manufactures of iron and steel from Great Britain, Canada.

Tea, china, camphor from Japan, China.

People.

The population of the United States would fill almost 20 cities like New York. The population is densest in the Eastern States, because those States, being nearest Europe, were first settled and they still receive most of our immigrants. As the population grew, settlers moved west and each new accession of territory was in answer to the need for more land.

Map: Outline the United States. Show accessions of territory since 1783.

(*To be continued in next* MONOGRAPHS.)

Geography—7B*

By MARY WOODLOCK.

Persia Imports: clocks and canned goods.

Japan Exports to the United States: raw silk and silk goods, tea, mats, china, camphor, rice, fireworks.

China Exports: raw silk and silk goods, tea, rice, wool.

Siberia Exports: furs.

India Exports: indigo, tea, teak.

Turkish Empire Exports: figs, dates, tobacco, wool, coffee.

Persia Exports: carpets and shawls.

COMMERCIAL RELATIONS WITH EUROPE.

Japan buys most of her textiles from the British Isles.

In China, Great Britain controls the foreign trade.

Russia gets all the trade of Siberia and is a rival of Great Britain's for the trade of Persia.

India sends most of her products to Great Britain and so does the Turkish Empire.

TRANSPORTATION.

Animals: In Persia, Turkish Empire and Arabia, camels are used extensively; mules and yaks are used in the high regions near the Himalayas; oxen are used in some parts of Japan and on the plains of India. Elephants also are used in India.

Man: Most of the freight transportation in Japan and China is done by man, either carrying loads on their backs or drawing loaded vehicles.

Railroads: The principal railroad is the Trans-Siberian, which runs from St. Petersburg, Russia, to Vladivostok, on the Japan Sea, and to Port Arthur. A branch line crosses the Caspian Sea and runs through Turkestan, Bokhara and Khiva.

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India has a good railway system, Bombay and Calcutta being the principal centers.

STEAMSHIPS.

Pacific Mail Steamship Company, from San Francisco, Cal., to Honolulu (Hawaii), Yokohama (Japan) and Hong Kong (China).

Japan Mail Steamship Company, from Seattle, Wash., to Yokohama (Japan) and Hong Kong (China).

Peninsular and Occidental Steam Navigation Company, from London to Bombay (India), Colombo (Ceylon), Singapore (Straits Settlements), Hong Kong (China), and Yokohama (Japan).

CABLES.

The Anglo-American Cable Company has a line from San Francisco to Honolulu, Midway, Guam, Manila, Hong Kong, Singapore, Madras.

PEOPLE.

Asia is the most thickly populated of the continents. It is the home of more than half of the population of the earth. The population of Asia would fill two hundred cities like New York.

RACES.

The Hindus, natives of India; the Arabs and the Persians, belong to a dark branch of the Caucasian race. The natives of Siberia, Korea, Japan and China belong to the Mongolian race. The Turks are a branch of the same race. The Malays inhabit the Malay Peninsula, Formosa and some other islands.

CIVILIZATION.

Taking progress in manufactures, education, and adoption and adaptation of modern ideas as an index, Japan is the most civilized of the countries of Asia. Japan has modelled its educational system on that of America. Education is not compulsory, but four-fifths of the children attend school. Tokio, the capital, is the seat of two universities.

India is progressing in manufactures and education. Until late years improvements were imposed by the British government and did not meet with the hearty co-operation of the natives, but many of the native princes are now beginning to realize that the Hindu, to hold his own, must adopt many of the ideas of his white brother. The extreme seclusion imposed on the women of India is a stumbling block in the way of education.

The great reverence paid by the Chinese to their ancestors stands in the way of their progress along modern lines. The granting of a constitution seems to indicate greater development in the future.

Africa.

Location: In relation to other continents; in relation to the oceans. How is it joined to Asia? How separated from Europe? What city could you reach by sailing west from the Cape of Good Hope?

Zones: It is situated in the north temperate, torrid, and south temperate zones.

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Latitude: 35° south latitude to 37° north latitude.

Longitude: 18° west longitude to 52° east longitude.

Size: Africa is next to the largest of the continents. Its area, if divided, would make 230 States the size of New York State.

Coastline: The coastline is very regular. There are no deep indentations and no peninsulas, hence there are few good harbors, a serious impediment to commerce.

Bordering waters: Mediterranean Sea—Gulf of Gabes, Gulf of Sidra. Red Sea—Strait of Bab-el-Mandeb. Indian Ocean—Gulf of Aden, Mozambique Channel, Delagoa Bay. Atlantic Ocean—Gulf of Guinea, Strait of Gibraltar.

Map: Outline Africa; show the bounding meridians and the parallels; the equator and the tropics; the coast waters.

Capes: Bon, Guardafui, Good Hope, Verde.

ISLANDS.

Zanzibar, Madagascar, Canary, Madeira. St. Helena, in the Atlantic Ocean, directly west of Angola, is interesting as the scene of Napoleon's captivity and death. It is an oceanic island, not connected with Africa.

SURFACE.

Africa is composed of a series of plateaus, with occasional mountain ranges, and a narrow fringe of lowlands around the coast. The Plateau of Abyssinia is the most important highland. The Drakenburg Mountains, of South Africa, form the extremity of the ranges of Abyssinia. The highest peaks in Africa are a series of extinct volcanoes near the equator.

RIVERS.

The rivers are long and large but not navigable, owing to the falls that act as a barrier to the interior. Explorations generally follow the courses of great rivers. The difficulty of ascending the streams of Africa is one of the reasons why its interior is comparatively little known.

The Nile emerges from Lake Victoria Nyanza and, its volume increased by its tributaries, the Blue Nile and the Atbara, flows down to the Mediterranean Sea, where it forms a large delta. "Egypt is the gift of the Nile." In the rainy season the volume of water poured down from the Abyssinian highlands so swells the river that it overflows its banks and deposits a layer of mud upon the lowland farms of Egypt. The river rises in June and recedes about October. Then the farmer sows his seed upon a soil prepared by the labor of the waters. Until recent years there was a reverse side to the picture. A dry season in Abyssinia meant a famine in Egypt, and a too rainy season meant an inundation instead of a gentle overflow. The British regulated this by building a great dam at Assuan to restrain the waters of a too generous season that they can be used in times of drought.

The Congo, the second largest river in Africa, rises in the interior, far to the south of the source of the Nile, and flows into the Atlantic Ocean.

The Niger flows into the Gulf of Guinea through a large delta.

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The Zambesi drains Rhodesia and Portuguese East Africa and enters the Mozambique Channel.

Victoria Falls, on the Zambesi, are said to be the highest and the most picturesque in the world.

The Orange River flows from the Drakenberg Mountains and enters the Atlantic Ocean.

Map: Outline Africa; trace four important rivers.

CLIMATE.

The greater part of Africa is in the torrid zone; its climate therefore, except in the extreme south, is tropical. The equatorial region has a heavy rainfall. The prevailing winds of the northern part of Africa are from the northeast. As they blow over Europe and Asia, they bring little moisture to Africa. As they become warm on nearing the tropical region they absorb the moisture from the land and leave the northern interior portion of the continent a vast desert, called the Sahara. The rainfall in southwestern Africa is mostly in summer, when the winds blow from the Indian Ocean. The Kalahari Desert, in the southwest, is not so dry as the Sahara.

COUNTRIES.

South Africa includes British South Africa and German Southwest Africa. British South Africa includes Cape Colony and Rhodesia. The latter colony was named after Cecil Rhodes. The country lying between Rhodesia and Cape Colony was once occupied by people of Dutch descent, called the Boers. At the close of the Boer War, Great Britain took possession of the Boer republics.

German Southwest Africa is yet in the infancy of its development.

Egypt lies between the desert and the Red Sea. It is interesting as the site of a very ancient civilization, some of the monuments of which are still in existence. The pyramids, the Sphinx, and the ruins of many temples and palaces attract the attention of the student and the tourist. Since the opening of the Suez Canal, Egypt has been one of the great highways of commerce. It is nominally under the government of a native ruler, called the Khedive, but British control is supreme.

The Congo State is in the interior of equatorial Africa. It is owned by Belgium. Most of the Congo country was explored by H. M. Stanley, who undertook the exploration at the request and at the expense of the King of the Belgians. At present its resources are undeveloped, and it is inhabited mostly by savages, but the building of railways and roads will work a great change in a very few years. The Congo River is not navigable for any great distance from the coast, owing to its many cataracts.

Algeria is a French possession bordering on the Mediterranean Sea. Tunis, east of Algeria, and the Sahara, south of Algeria, are also under French control.

Morocco, west of Algeria, is ruled by a Sultan. It is separated from Spain by the Strait of Gibraltar.

Map: Africa; trace the boundaries of four important countries.

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AFRICA—(*Continued*).

Cape Town, in Cape Colony, one of the divisions of British South Africa is an important port. It is situated on Table Bay. It is the southern terminus of the Cape-to-Cairo Railroad.

Johannesburg, the chief city of the Transvaal is important as a mining center. It is the distributing point for the output from the gold fields of the Rand. Foreign miners attracted to the Rand demanded representation in the Boer government. The refusal of their request brought on the Boer War, after which the Transvaal became British property.

Kimberley is the center of the operations of the De Beers Diamond Co., which produces 9-10 of the diamonds of the world.

Cairo, the capital and the largest city of Egypt is at the head of the Nile delta. It is a picturesque city much visited by tourists. The pyramids are near enough to be reached by trolley. This city is the residence of the Khedive, the nominal ruler of Egypt.

Alexandria, the chief port of Egypt is on the Mediterranean at the principal mouth of the delta. It is one of the seats of ancient civilization and is named for its founder Alexander the Great, who planned the original city. It is the distributing point for the commerce of Egypt.

Khartum, at the confluence of the Blue and White Niles, is the capital of the Anglo-Egyptian Sudan. It is the starting point for caravans crossing the desert. This part of Africa came under British control as a result of the Sudan War in the reign of Queen Victoria. Khartum was the scene of the defeat of an English army and the death of its leader, General Gordon.

Map. Outline Africa. Locate five important cities.

Resources, Industries, Products.

The resources of Africa are not fully known, owing to the fact that large tracts are still only partly explored. The climate repels the white man in some regions, and in others the difficulties of travel prove an obstacle. The rivers, the usual highways of exploration in a new country, are rendered unfit for navigation by their numerous cataracts and falls.

Agriculture is the principal industry of all settled peoples except in the southern part where mining is important. In some countries, Egypt and Algeria in particular, the shortcomings of nature in providing but a niggardly supply of moisture have been supplemented by the ingenuity of man. It is not impossible that in the far future the deserts will disappear before the irrigation ditch and the artesian well.

The forests of tropical Africa yield rubber, palm oil, and palm nuts. There is such abundance of these products at the present time that they are being harvested wastefully and with no regard for the future supply.

There are no manufactures on a large scale and modern methods are unknown except in British South Africa. Handmade articles of brass and leather are produced in the countries bordering the Mediterranean and carpets are woven in Tunis.

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In British South Africa mining is very important. Diamonds, gold, copper, iron and coal are found in abundance. It is probable that many rich veins exist undiscovered in other parts of the continent. Morocco is known to be rich in copper ore but it is undeveloped.

Sponges are found in the Mediterranean Sea off the coast of Tripoli, and pearls, in the Red Sea.

Africa is rich in water power which has not yet been harnessed to the necessities of man. Victoria Falls on the Zambesi River, 340 ft. high and almost a mile wide, will some day be the center of a manufacturing district.

Products.

Egypt: cotton, maize, wheat, sugar, dates, rice.

Algiers: wine, sheep, wool, cork, olive oil, dates, vegetables.

Morocco: leather, hides, olive oil.

Congo State: rubber, palm oil, ivory.

British South Africa: diamonds, gold, ostrich feathers, coal, hides, fruit, wine.

German Southwest Africa: cattle.

Map. Outline Africa. Locate five countries. Indicate the leading products of each.

Commercial relations with the United States.

We do not sell directly to Africa, though many of our products reach Africa through European countries. There is no regular line of steamships from the United States. The few commodities bought and sold directly are carried by "tramp ships."

Imports from the United States.

Egypt: petroleum, farm machinery.

Algeria: flour.

Morocco: canned goods.

Congo State: flour, lamps, shoes, ironware, machinery.

British South Africa: rails, agricultural machinery, canned goods mining machinery, lumber.

Exports to the United States.

Egypt: dates.

British South Africa: ostrich feathers, fruit, wool, hides, palm oil.

Map: Outline Africa. Locate five countries, two ports. Indicate chief imports and exports.

Commercial Relations With Europe.

Nearly all African exports go either to Great Britain or France and most of the imports come from the same countries. In the case of British and French possessions, preferential tariffs make it cheaper for the colonies to import from the mother countries.

England sends coal to Algiers and Tunis, and cotton goods and other textiles to all the other countries.

Algiers is the vegetable garden of France. Most of her trade is carried on through Marseilles.

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Steamship Lines.

Union Castle Mail Steamship Co. from London to Cape Town, calling at Madeira, Ascension and St. Helena. Time, 15 days.

French Mail Steamship Co. from Marseilles to Algiers and from Marseilles through the Red Sea to ports in East Africa and to Madagascar.

A steamship line connects Cape Town with Wellington (New Zealand), calling at Hobart (Tasmania). Time, 24 days.

The Anglo-American and the Commercial Cable Cos. have connected London with Cape Town and with southern ports of Asia and Australia.

There is a project to establish a Marconi station at Teneriffe (Canary Islands), that will receive and transmit messages to and from any part of the Atlantic seaboard.

Map: Outline eastern hemisphere. Locate ports in Europe and Africa and indicate the steamship connections.

Transportation.

The principal railroad of Africa, still in process of construction, is the Cape-to-Cairo Railroad. When completed it will present a highway of travel from one end of the Continent to the other and will, in all probability, lead to the development of undiscovered resources.

In the Congo State Belgium has a railroad under construction, which has already been opened to Stanley Pool, beyond which the river is navigable for a long distance. The use of automobiles on the level grassy portions of the Congo has been advocated as the easiest and quickest way of marketing the rubber, but this plan has yet to be found practicable.

The French are building railroads in Algiers and are projecting one which will cross the desert to Lake Chad. At present, as from time immemorial, desert travel is done by means of camels. The construction of eye, foot, stomach, and hump, for which this animal is remarkable, render it peculiarly fitted for desert uses. Desert travellers set out in parties finding in numbers protection against robber bands, sand storms and other perils. A caravan consists of from one to ten thousand camels. They follow regular routes which are marked by piles of stones. It takes an average caravan about three months to go from Khartum to Tripoli.

Caravans of native carriers are used to convey goods in the interior. A carrier can travel about nineteen miles a day with a load of 75 pounds.

It has been proposed to train the African elephant to labor as does his brother of Asia, but the project has not received much attention.

Oxen are not much used, owing to the tsetse fly, an insect whose bite is injurious to cattle.

The rivers are all more or less obstructed for long distance travel by rapids, but steamships ply on the Nile between cataracts, on the Congo above Stanley Pool, and on Lakes Victoria Nyanza and Janganyika.

Map. Outline Africa. Locate Cape Town, Cairo. Indicate the route of the Cape-to-Cairo Railroad.

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Population, Races, European Influence, Civilization, Government.

The population of Africa would fill about 40 cities like New York.

The Arabs, Berbers and Copts of the north belong to the dark branch of the Caucasian Race.

Africa is the home of the Negro Race. They are found in the interior, south of the Sahara and are represented in the south of the Zulus, Kaffirs and Hottentots.

Europeans are the dominant element in the coastal regions and they are gradually pushing toward the interior. As a rule the natives retire before the movement of white civilization. Those remaining in the European settlements are employed at rough manual labor on farms and in mines. Lately Chinese and Hindus have been employed in the mines of British South Africa, the native labor being unsatisfactory.

The portions of the Continent controlled or owned by Great Britain are the most progressive. British South Africa has a climate sufficiently temperate to attract emigration from the British Isles and the government is wisely administered. The newly opened colonies are governed by a Crown Commissioner. The long established colonies are ruled by a governor appointed by the British Cabinet and two houses elected by the people. Members of the legislatures must understand Dutch and English, as speeches are made in either language.

German Southwest Africa is being developed under a German military government. Up to the present it has attracted few settlers, owing to its poor soil and lack of outlet. The only good harbor, Walfish Bay, belongs to Great Britain and is governed as a dependency of Cape Colony.

Congo State is governed by Leopold II of Belgium and three commissioners. There is a local governor appointed by the king at Boma.

Morocco remains almost untouched by European influence. Railroads are unknown, roads are mere tracks, and wheeled carts are in use only in cities. Its few harbors are obstructed and no attempt has been made to improve them. The Sultan is an absolute ruler.

(To be Continued.)

Details of History—8A

By Ella K. Jelliffe.

Discovery and Exploration.

1. What geographical knowledge did Europe possess in the fifteenth century?

They knew one-quarter of the world known to us, viz., southern and eastern Asia, northern Africa, a very few of the islands of the sea, and their own Continent.

2. With what countries did Europe carry on trade in the fifteenth century?

With India, China, Japan and the East Indies.

3. In what way was this trade carried on?

The Asiatics traveled by caravan across their country to the shores

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of the Black Sea or of the Mediterranean, where they met the Europeans who came in ships to Alexandria, on the north coast of Africa or to Constantinople on the Black Sea. The Europeans brought metals, wood, and pitch, and took back silk, precious stones, ivory, pearls, spices, etc.

4. Name one great cause of the zeal for exploration in this century.

This zeal was mainly due to commercial reasons. A new route to India and its wealth was greatly desired by all European countries; for the Turks had pushed over from Asia and had taken possession of Constantinople. They plundered the caravans and prevented the Europeans from landing at the seaports of the Black and Mediterranean Seas. For this reason, many voyages were made, chiefly by the Portuguese, in search of a new route to India, as all the central and southern part of Asia was called at that time; and the attempts to find either a southwest or northwest passage led to the exploration of the Atlantic and Pacific Oceans.

5. Name some important inventions of the fifteenth century.

The art of printing with movable types was first brought into use in 1450 by John Gutenberg. The mariner's compass, known long before the fifteenth century, came into general use then. Gunpowder, too, was known long before this century, but it was brought into use in firearms about this time, and made war less brutal than it had been before.

6. Name the chief Spanish explorations and claims.

The explorations of the Spaniards were confined to the southern part of North America, viz., Florida, the Pacific, the Mississippi, and Mexico.

Columbus sailed under the flof of Spain and discovered the West Indies and the mainland of South America.

Vespucci, another Italian, but also under the flag of Spain, made voyages to South America, and because he wrote of his travels, the Western Hemisphere was named America in honor of him, his Christian name being Amerigo.

De Leon discovered Florida in 1512.

Balboa discovered the Pacific in 1513.

Cortez conquered Mexico in 1519.

Magellan sailed round the world 1519-1521, and proved that America was a distinct continent.

De Soto discovered the Mississippi, 1541.

The French and the Spanish fought for the possession of Florida but the latter won, and at the close of the sixteenth century, the Spaniards were the only white occupants of the western continent.

7. Name some French explorations and claims.

The French confined their explorations to the St. Lawrence River and to the eastern coast of Florida and its vicinity.

Verrazano in 1524 cruised along the eastern coast of North America from North Carolina to New England.

Cartier in 1535 discovered the St. Lawrence and named the city of Montreal.

Ribaut in 1562 attempted to plant a settlement of Huguenots or French Protestants at Port Royal, South Carolina; but the settlers grew homesick and started back to France.

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Laudonniere in 1564 brought a second expedition to St. John's River, Florida. This settlement was destroyed by the Spaniards.

8. Name some English explorations and claims.

The English explored the coast at the far north and on the Pacific and on that part of the Atlantic coast then called Virginia.

The Cabots in 1497-1498, though Italians, sailed under the flag of England and discovered the continent of North America, near the Gulf of St. Lawrence. One of them afterwards explored the coast from Nova Scotia to Cape Hatteras.

Frobisher in 1576; and Davis, a little later, tried to discover a northwest passage to India and cruised about in the seas and straits north of North America, leaving their names on the map but accomplishing nothing.

Sir Humphrey Gilbert, in 1583, took possession of Newfoundland for Queen Elizabeth.

Sir Francis Drake sailed round the world, 1577-1579.

Raleigh, in 1584, explored the coast of North Carolina, which with other lands in its vicinity was called Virginia by the English Queen; indeed this name was given to the country extending from North Carolina to Nova Scotia and from the Atlantic westward nearly to the Mississippi.

Raleigh, in 1585, established a colony on Roanoke Island under Ralph Lane as governor. The emigrants returned to England, however, in about a year's time, carrying with them the potato and tobacco. In 1587, Raleigh tried to establish a second colony but it failed also.

In 1602, Gosnold discovered Cape Cod in Massachusetts and found a shorter and more direct route to America, going directly west instead of southwest.

9. Name some Dutch explorers and their claims.

Henry Hudson in 1609 sailed up the river named for him. The Dutch took possession of the country, calling it New Netherland and founding the city of New Amsterdam, afterwards New York, on Manhattan Island. The Dutch claimed the country between the Hudson and the Delaware, now called New Jersey, though the English claimed it, too, because of the expeditions by the Cabots.

10. Who were the Indians and how did they get their name? Describe them and name their chief tribes.

The natives of America were called Indians by Columbus because he thought he had reached a part of the Indies, in Asia. They were copper-colored, with straight, black hair; the men cut their hair off close to the head with the exception of a lock in the middle called the scalp-lock. They lived in wigwams or huts of bark, and engaged in hunting, fishing and agriculture. They believed in a Great Spirit but also in many inferior spirits, both good and bad, and they looked for another life beyond this one. They had great self-control and great respect for courage; they made treacherous and cruel enemies but steadfast friends. Though savages, they were not degraded.

They were a free nation governed by councils, the records of these councils being kept in wampum belts—this wampum was made of shells

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strung on strings; and later, of beads. The arrangement of the beads and their colors had a meaning. Some of their chief tribes were the Algonquins, extending from the Mississippi to the Atlantic; the Iroquois, occupying the greater part of what is now New York State; the Cherokees and the Appalaches, all of these lived east of the Mississippi. West of that river were the Dakotas, the Shoshones, the Apaches, and the Comanches. On the Pacific coast were found the Flat Heads, the Utahs, the Aztecs, the Pueblos, and many others.

Each tribe, or rather each clan in a tribe had a totem, or badge, to distinguish it from others. The totem was usually a picture of some animal, which animal was held sacred by the tribe.

Colonial Development.—I. Virginia.

1. When was it settled? In 1607.

2. By whom? By the London Company under a charter given by King James I of England, with permission to settle on territory between the 34th and 38th parallels of North latitude.

3. Who was the hero of the expedition?

Captain John Smith.

4. What European conditions led to the forming of this colony?

Many Englishmen having returned from the European wars could get no employment, especially as a great many farmers had converted their farms into sheep pastures. There was great distress and men looked to America as a place of refuge.

5. What was the character and purpose of the settlers?

The settlers were made up of persons of good family; and of mechanics, tradesmen and laborers; most of them were unfitted to struggle with the life of the wilderness. They went hoping to make their fortunes in the New World.

6. Where did they settle? When?

At Jamestown on the James River, in Virginia, in 1607.

7. What hardships did they endure?

Many fell ill with fever brought on by unwholesome water and poor provisions; the heat of the summer, too, caused many deaths. After a while, the Indians robbed and murdered the settlers, and everything went to rack and ruin; still later, in 1676, there was a terrible Indian attack, punished by Bacon, who also headed a rebellion against the governor and finally burned Jamestown to the ground.

8. What successes did the Virginia colony meet with?

Things prospered under stern Governor Dale, the settlers receiving land of their own and taking pride in cultivating it. The raising of tobacco led to a regular and profitable trade with Europe and to an increase of population in the colony.

9. What relations existed between the colonists and the Indians?

One of the colonists named John Rolfe, married Pocahontas and this made her father, Powhatan, who was the chief of his tribe, the firm friend of the colony at a time when it needed friends. Later, the Indians were unfriendly and robbed and murdered the settlers—this happened after

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Smith went back to England. Then again, in 1676, there was a terrible uprising of the Indians and a great massacre of the colonists.

10. What relations had Virginia with other colonies?

She traded with the other colonies. People from other colonies migrated to Virginia, especially persecuted Puritans. The Virginia planters themselves pushed inland and southward to Carolina. Though travel was slow and difficult, yet it was done to some extent; and letters and newspapers passed from one place to another occasionally. In the conflicts with the Indians, the colonists found it necessary to form leagues; and more than once, congresses of delegates met—a notable one at Albany in 1754.

11. What relations had Virginia with England?

The colony was settled by the London Company under a charter from King James I, and was to be governed by a council appointed by the king and responsible to him. Virginia was a strong Royalist colony, always supporting the King's party in England. Many Cavaliers came to Virginia when Cromwell came into power. Lord Delaware came as governor under a new charter which gave him the entire control of the colony. In 1619, a new governor held a general assembly elected by the freemen of Virginia —this was the first American legislative body and was sanctioned by England in a written constitution sent out by the London Company. Virginia became a royal province in 1624, when the London Company's charter was taken away from them. Under Governor Berkeley, the people had no voice in the government. Navigation Laws, obliging the colonists to export their tobacco only in English ships going to England, and to buy no foreign imports except those brought in English ships, ruined the trade of Virginia. Charles II, not only enforced these laws, but in 1673 gave away Virginia to two of his favorites; the colonists, however, were at last declared owners of the land.

12. Name some of the occupations of the Virginians.

The chief occupation was the raising of tobacco and the trading of it for other commodities.

13. When and why was slavery introduced?

In 1619, twenty negroes from Africa were sold to the colonists by the Dutch. These negroes were employed as field hands in the tobacco plantations—they could stand working in the heat better than the white people could.

14. What kind of social life had the Virginians?

There was a good deal of luxury among the rich planters of Virginia, who lived in stately mansions, handsomely furnished; and entertained their friends, and even the passing stranger, with the greatest hospitality, providing plenty to eat and drink and pressing their guests to stay to enjoy a fox hunt or other sport. Both men and women dressed very richly and lived in a quiet, stately way, without hurry or worry. They owned their servants instead of hiring them.

15. Tell of education in Virginia.

There were no free schools and but few schools of any kind, so there were no good opportunities for obtaining an education. The planters had

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tutors at home for their children or sent them to England to be educated. In 1693, however, William and Mary College was established in Virginia under charter from the King and Queen. The colonists sent to England for books and magazines but there were few large libraries even among the wealthy.

16. To what extent did the spirit of liberty exist in Virginia?

To a very large extent; for to Virginia belongs the credit of having the first representative assembly in America—1619. In 1676, there was a people's Assembly that enacted the Bacon laws protesting against tyrannical government. A hundred years later, Virginia was the first colony to propose the establishment of American independence.

17. What was the form of government of the colony of Virginia?

It was first a charter government, then royal.

18. Name the chief men of the Virginia colony.

John Smith, Governors Delaware, Dale, Yeardley, Berkeley, Nathaniel Bacon.

19. What European conditions led to the settlement of New York?

It was first settled by the Dutch in 1614 under the name of New Amsterdam for purposes of trade with the Indians; for Holland had become a great trading and commercial nation; and after Hudson had discovered for them the river which bears his name (while seeking 1or a passage to China and India) and had told them that they could buy valuable furs from the Indians at enormous profit, they decided to colonize.

Later, England claimed the land, basing her claim on the explorations of the Cabots. King Charles II, understanding the commercial advantages of the Hudson and of New York harbor, determined to wrest it from the Dutch. Besides Virginia and New England were both in danger of Dutch invasions. So in 1664, a British fleet came and took the place away from the Dutch and called it New York in honor of the Duke of York, who was the King's brother.

20. Describe the character and purpose of the Dutch settlers.

Proprietors of fifty settlers were called Patroons. They paid the emigrants' expenses from Holland, stocked the farms with horses, cattle, and implements, and provided a school master and minister of the Gospel. In return, the emigrants cultivated the lands of the patroons for ten years, sold their grain or produce to the patroons and appealed to them as judges in all their disputes with one another.

There were Dutch, French and English settlers in the town, even in those early days carrying on trade and commerce and cultivating farms. Many came because of the favorable terms of the charter granted by Holland; they were industrious, hard working people, anxious to get along in life and have pleasant homes.

21. Tell how the settlement was made and of what it consisted.

In 1626, the Dutch West India Company sent out a colony under Governor Minuit. He landed on Manhattan Island, where there was already a Dutch trading post. He bought the entire island of 14,000 acres from the Indians for twenty-four dollars' worth of cloth, buttons and trinkets.

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The new settlement consisted of a fort, a stone warehouse and a cluster of log huts. It was first called by the Indian name of Manhattan and later, by the Dutch name of New Amsterdam.

22. Did the Dutch settlement suffer any hardships?

Some of their governors were stern and tyrannical and the people had to fight to have their representatives elected to assist in the government; and in 1664, the Dutch had to suffer the extreme hardship of having their flag pulled down and the English one run up instead. This, however, was not so much a hardship to the settlers, who expected to enjoy more religious, commercial and political freedom under the English than they had under their Dutch governors, as it was to the country of Holland itself.

23. What successes did the colony meet with?

The people prospered and added to their land by getting possession of what is now Delaware and New Jersey.

24. What were the relations of this colony with the Indians?

The Dutch had friendly relations with the Indians for Hudson had bought the land from them, though he unfortunately taught them to drink whiskey.

25. What relations had this colony with other colonies?

This colony formed a connecting link between New England and Virginia. While the Dutch possessed it, it was a menace to these English settlements, as the Dutch were liable to encroach upon the other's territory.

People traveled between New York and Philadelphia, taking two or three days for the trip, in a covered wagon.

In 1690, delegates met in conference at New York to form a union against the French.

26. What relations had the colony with England?

England treated the colony fairly at first—governing them well, giving them a voice in making the laws, allowing them free trade and freedom to worship as they pleased. Later, New York, as well as the other colonies resented England's oppressive measures, such as the Stamp Act and other taxes.

27. Name the occupations of this colony.

Agriculture, trade, commerce, and later some small manufactures, such as paper and glass. As amusements, the Dutch introduced coasting, skating and sleighing. Hunting and fishing were common in all colonies.

28. Did this colony own slaves?

It was the Dutch who first introduced slavery into America by selling twenty negroes to Virginia. Later, New York employed negro slaves as house servants, but under the English slave trade decreased.

29. What was the social life of the colony?

The better residences in New York were made of brick or stone, the ordinary dwellings were made of logs. These Dutch houses had gable ends facing the street, and many doors and windows.

The patroons were very powerful and very wealthy and lived in grand state; they had about them a population of white settlers who were their servants and laborers. There was traveling between Boston and New

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York and between Boston and Philadelphia, though it took six days for the former journey and three for the latter. There was coasting, skating, and sleighing, and ruder sports, as horse racing, bull baiting, and cock fighting.

30. What means of education had these colonists?

There were many successful private schools but little public money was used in educating the people. The Dutch, however, rivalled the Puritans in New England in their establishment of free schools, but these schools fell into disuse when the colony passed into the hands of the English. The rich, of course, imported books by the best authors from England.

31. Was the spirit of liberty strong in New York?

It was, indeed, for one reason the colonists were willing and eager to change their Dutch governors for English was because they had been obliged to fight to get concessions from Stuyvesant, the last of the Dutch governors, and they were assured by the English that they should have a great deal of freedom in every way—in religion, trade and government. Later, when England passed aggressive measures, New York was among the first to resent and rebel.

32. What form of government did New York have?

First, it was proprietary under the Dutch patroons; and later it was Royal or Provincial under English governors.

33. Names the chief men of the colony.

Peter Minuit, first Dutch governor; Peter Stuyvesant, last Dutch governor; Patroons Van Rensselaer, Schuyler and Van Cortlandt; English governors Nicolls, Andros, Leisler; not forgetting Henry Hudson, the discoverer of the site and advocate of its beauty and desirability as a commercial centre.

(*To be continued in next* MONOGRAPHS.)

Test Questions—8B

History.

What happened in 1492, 1497, 1513, 1520 and 1523?

What happened in 1534, 1608, 1609 and 1619?

When and by whom was the first settlement made in Virginia? In Massachusetts? When was Boston founded?

When and by whom was the first settlement made in New York?

When and by whom was it taken from the original settlers?

When was Pennsylvania settled?

Tell about: Marquette, La Salle, Braddock, Wolf, Montcalm.

Write a short account of the convention that made the Constitution.

Discuss the compromises of the Constitution.

Who were the two great political leaders of Washington's administration?

State the principle upheld by each.

What did the Constitution do for us?

Name the political parties before the Revolution.

Name the political parties when Washington was elected president.

Name the political parties during Washington's administration.

Name the leaders of each party.

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Name the first four presidents.
Give the dates of their administrations.
Name the men of Washington's cabinet.
What office did each hold?
What are strict constructionists?
What are liberal constructionists?
Who are the Republicans of to-day?
Who are the Democrats of to-day?
What are the principles of the Federalists?
Name the chief political events of Washington's administration.
When and by whom was the First National Bank chartered?
When did the charter expire?
Name territories acquired by purchase. From whom purchased? When? Price?
What did the 13th amendment do?
What did the 14th amendment do?
What did the 15th amendment do?
What amendment did the Sedition Act violate?
Tell about: Commodore Matthew C. Perry, Elias Howe, Eli Whitney, Prof. Bell, John Ericsson, Samuel F. B. Morse, Robert Fulton, Thos. Edison, Cyrus W. Field, Geo. Bancroft.
What happened in 1765? 1777? 1781? 1783? 1815?
What was the object of the British in trying to capture New Orleans in 1814?
Why was this battle unnecessary?
State two results of this war.
What led to the Monroe Doctrine?
Explain the provisions of this policy?
How did the Louisiana Purchase lead to the Missouri Compromise?
State its provisions.
What territory did we purchase in 1853? From whom? Price.
In 1867. From whom? Price.
How did we obtain Texas?
Name the chief executive of the country.
Term of office. Salary.
What are the qualifications?
How are the Senators appointed? By whom elected? Name five powers of the Senate. How are the Representatives apportioned? How elected? Salary? Term of office? Qualifications? What is the title of the presiding officer of the House? His name? His salary?
Name four powers of Representatives.
What led to the settlement of California?
What compromise was made at this time?
Explain it.
What led to this compromise?
What man urged Congress to pass this compromise?
Give another name for the compromise.

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What did they call Clay?
What two clauses in the compromise favored the North?
What two clauses favored the South?
What other compromises did Henry Clay make?
Name all the presidents of the U. S.
Tell how many terms each served.
Discuss the platforms in the election of 1860.
To what did this election lead?
What was the immediate occasion of the Civil War?
What was the Union plan?
Describe briefly the movements of Gen. McClellan.
What was the effect of the Battle of Antietam?
What finally evolved from this effect?
Why was this an important battle?
How did the people of Pennsylvania show their respect for the martyrs to their cause?
How did Lincoln respond?
What was the Emancipation Proclamation? (2) When was it sent out?
What was the decisive battle of the Revolution? When fought?
Of the Civil War? When fought?

History, Civics and Geography.

What was Lincoln's standpoint as to the secession of the South?
How did his standpoint color his plan of reconstruction?
What was the difference between the plan of Lincoln and that of Johnson?
Why was Congress opposed to Johnson?
What was the Congressional Plan of Reconstruction?
Give the history of negro suffrage.
From what did the 14th amendment evolve? Give the substance of it.
What was the Ku Klux Klan?
Describe the government of New York State?
Locate the following places: Bull Run, Antietam, Gettysburg, Richmond and Vicksburg.
Draw a map to illustrate the Mississippi campaign.
Describe the important battles of the Tennessee campaign.
How did the people of the United States reward General Grant for his services in the Civil War?
Prove that the Kansas and Nebraska Bill brought on the Civil War.
What is meant by Federal as opposed to State supremacy?
Describe the benefits of a (1) a protective tariff; (2) free trade.
Which do you favor and why?
What have been (a) the economic effects of the abolition of slavery? (b) the other effects of the abolition of slavery?
Name three leaders in each: (1) statesmanship; (2) literature; (3) science; (4) art.

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Discuss immigration as regards (1) the benefits to the U. S.; (2) the detriment to the U. S.; (3) what, if any remedies do you suggest?

What recent events have made the U. S. a "world power"?

Name 10 dates that are stepping stones in the progress of the U. S and specify why each is.

Discuss the first nine amendments.

Discuss the eleventh and twelfth amendments.

Name the three departments of the city government.

Oral Arithmetic.

Horses cost $125 each. How many for $6,000?

Cost of 96 typewriters at $37½ each?

Find the cost of 12½ pounds of tea at 56c. per pound.

The interest of $250 for 60 days at 6%?

a. 34 × 26.

b. 22 × 18.

c. 43 × 37.

d. 58 × 42.

e. 65 × 55.

Question 5 applies to finding the product of any 2 numbers the sum of whose units is 10 and whose tens digits differ by 1.

Oral Arithmetic.

The product of 3 factors is 540. Two of the factors are 5 and 9. Find the third factor?

If 3 bushels 3 pecks of potatoes cost $3, what will 3 pecks 3 quarts cost?

In what time will $600 amount to $726 at 6%?

I lent my friend Jones $60 for 5 months. Later, I lent him $40 for 6 months. For how many months must he lend me $80 to cancel exactly the obligation?

I bought a hat for $2. How shall I mark it that I may gain .20 and reduce the price .25?

Horses are worth $125 each. How many for $1,000?

Cost of 1,960 books at $.12½?

Cost of 6,000 boards at $3 per centum?

Written Arithmetic.

Show that the fraction 17/21 is greater than 4/5 and less than 5/6.

A jeweller bought 3 pounds avoidupois of gold dust at $20 an oz., and sold the same for $300 a pound, Troy weight. Did he gain or lose and how much?

Multiply .7854 by 33⅓ (short method). Divide 9304.75 by 33⅓ (short method). Sold 9,999 pounds of stone at $2.10 a ton (short method).

When it is 8 o'clock A. M. at Columbus, longitude 80 degrees 2 minutes

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0 seconds west, it is 10 minutes and 18 seconds past 5 o'clock in the morning at Seattle. Find the longitude of Seattle?

Divide $840 among A, B, and C, so that the number of dollars they receive shall be as the numbers 2, 3 and 4.

Find the amount of $275.50 for 3 years, 8 months, 10 days at 3 1/5%.

A room is 30 ft. long and 26 ft. wide. How many yards of carpet will be neded to cover it if the carpet is 27 ins. wide?

Brooklyn, Nov. 15, 1906.

Ninety-five days after date, I promise to pay to the order of George Brown, four hundred and sixty dollars, with interest at 4½%.

Value received. ROBERT CARPENTER.

Discounted December 1, 1906, at 6%.

Find proceeds of above note.

Which will cost the more and how much to fence a square plot of 90 acres or a circular plot 125 rods in diameter at $1.20 a rod?

A real estate agent sold my house on 3% commission and I realized $7,229.41 after the commission was paid. What was the commission?

Simplify $\frac{6\frac{1}{4}}{4\frac{1}{4}}$ Give the principles involved.

$\frac{}{12}$

Multiply .7854 by 16⅔. Short method.

Divide 9304.75 by 3⅓. Short method.

Sold 9850 pounds of stone at $2.10 a ton. Short method.

Divide $720 among A, B and C, so that the number of dollars they receive shall be as the numbers 5, 6 and 7.

Find the interest of $275.50 for 3 years 8 months 10 days at 3 1/5%.

A merchant bought cloth at $4.80 a yard. At what price must it be marked that 16⅔% may be taken off the marked price, and yet a profit of 33⅓% be made?

If an agent is sent $4047.90 to invest in sugar after deducting his commission of 3%, how many pounds can he buy at 3c. a pound?

Brooklyn, Nov. 15, 1906.

Ninety days after date, I promise to pay to the order of George Brown, three hundred and fifty dollars, with interest at 4%. Value received.

ROBERT CARPENTER.

Discounted December 3, 1906, at 6%.

Find proceeds of above note.

Which will cost the more and how much to fence a square plot of 90 acres or a circular plot 120 rods in diameter at $1.20 a rod?

The hind wheel of my bicycle is 28 inches in diameter. How often will it revolve in going a mile?

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Mathematical Review—8B

By SAMUEL VIERTEL, P. S. 43, Manhattan.

(*Continued from March*, 1908, MONOGRAPHS.)

ELEVENTH WEEK—Continued.

Mensuration.

Convex surfaces of spheres.

Give convex suface to find radius.

Exercises in rapid calculation in this connection:

$\tilde{\Pi} = 3.1416$ decimal.

$\tilde{\Pi} = 3\ 1\text{-}7$ compound fraction.

Problems.

Indirect cases of percentage, solved by analysis and algebra.

Algebraic solution of problems, two unknown quantities.

Business Application.

Functions of savings banks; exact interest, etc.

TWELFTH WEEK.

Four Operations.

Bank Discount.

Rapid Calculation.—To find bank discounts and proceeds.

Mensuration.

Volume of square prisms and cylinders.

Capacity of bins, wells, etc.

Brief setting down of actual work, using cancellation methods wherever possible.

Problems.

Indirect cases of interest and bank discount, solved by analysis and algebra.

$P \times R \times T = I.$

$P + I = Amt.$

$P - I = Proceeds.$

The numbers used in the indirect, should be easy to handle, the thought element rather than the mechanical being predominant in this work.

Business Application.

Banks of deposit.

Banks lending money.

Checks, stubs, deposit slips.

THIRTEENTH WEEK.

Four Operations.

Bank Discount.

Discounting notes, interest-bearing notes.

Rapid calculation devoted to find this work.

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Rapid work in finding time between date of discount and date of maturity.

Mensuration.

Volumes of square, pyramid and cone.
Use cancellation to abbreviate work.

Problems.

Indirect cases of interest and bank discount, algebraically and analytically solved.

Business Application.

Promissory notes; interest-bearing notes; uses.

FOURTEENTH WEEK.

Four Operations.

True Discount.

Practice on indirect cases needed here. Solved by algebra and analysis.

Mensuration.

Volumes of spheres.
Use cancellation to abbreviate work.

Problems.

As in Twelth and Thirteenth Weeks.

Business Application.

As in Twelth and Thirteenth Weeks.
Trust companies.

FIFTEENTH WEEK.

Four Operations.

Ratio and proportion.
Partnership.
Representing statistics by lines and surfaces.

Mensuration.

Similar areas; surfaces; outlines.
Apply proportion.

Problems.

In proportion and partnership.

Business Application.

Ordering goods by letter.

SIXTEENTH TO TWENTIETH WEEKS.

Review of the course after style of Smith, in his Grammar School Arithmetic, Chapter III.

Notation—Arabic and Roman.
Decimal system—Varying scale.
Different kinds of units.

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Addition, showing general principle:

			ft.	in.	
584	4.5	4⅝	7	3	$8x + 4y.$
246	6.07	6½	4	11	$4x + 7y.$
831	8.92	3⅓	6	0	$3x + 6y.$

In the same way the general principles underlying the other fundamental operations may be shown.

Review of short methods.

By the powers of ten and their multiples.
By aliquot parts of 100, 1,000.
Denom. numbers.
Percentage.
Interest.
Mensuration.

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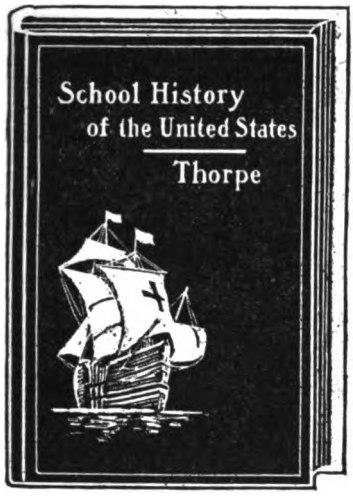

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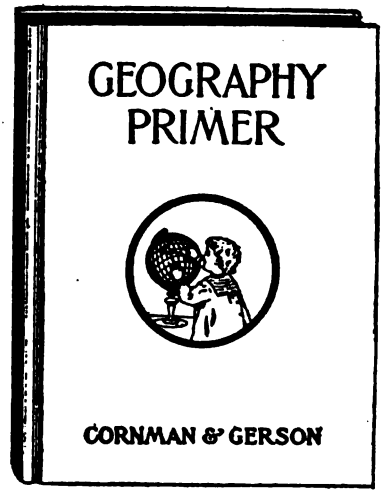

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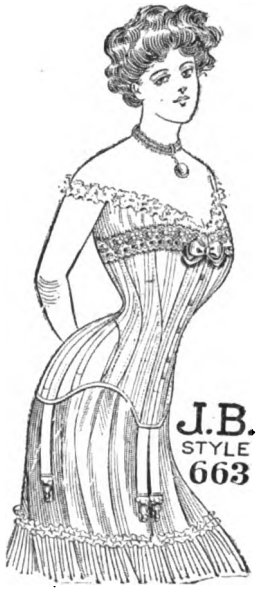

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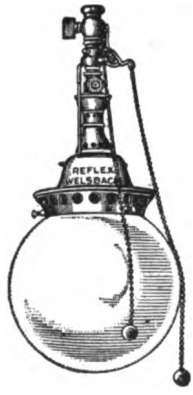

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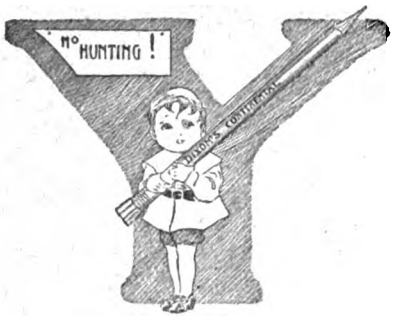

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